

SAMSUNG

User Manual



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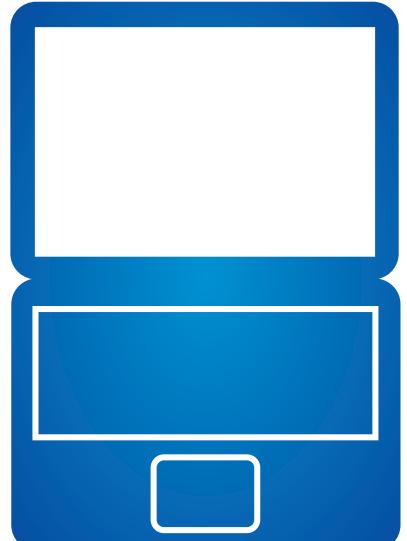


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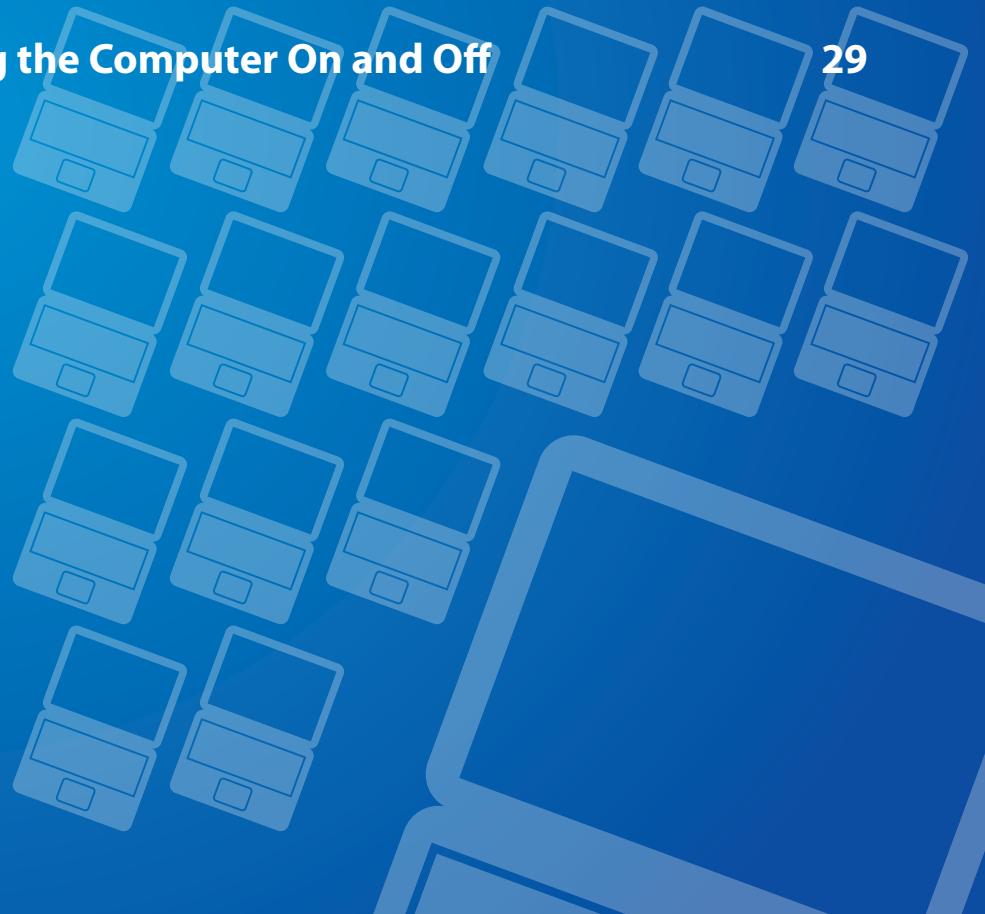
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Chapter 1.

Getting Started



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Before You Start

Before reading the User Guide, first check the following information.



- Optional items, some devices and software referred to in the User Guide may not be provided and/or changed by upgrade.
Note that the computer environment referred in the User Guide may not be the same as your own environment.
- The pictures used for the cover and the main body in the User Manual are those of the representative model of each series and may differ from the actual appearance of the product.
- This guide describes procedures for using both the mouse and the touchpad.
- This manual has been written for the Windows 7 operating system. The descriptions and figures may differ depending on the installed operating system.
- The User guide supplied with this computer may vary depending on your model.



Using the software

- The software described in the main text can be launched using the following menu path.
 - **Start > All Programs**
 - **Start > All Programs > Samsung**
- When the programs are not installed, select **Samsung Recovery Solution > System Software** to install the programs. (Only for models supplied with Samsung Recovery Solution)

Before You Start

Safety Precaution Notations

| Icon | Notation | Description |
|--|----------------|--|
|  | Warning | Failure to follow instructions marked with this symbol, may cause personal injury and or fatality. |
|  | Caution | Failure to follow instructions marked with this symbol, may cause slight injury to yourself or damage your property. |

Text Notations

| Icon | Notation | Description |
|--|----------------|--|
|  | Caution | Content included in this section includes information required about the function. |
|  | Note | Content included in this section includes helpful information to use the function. |

Copyright

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Samsung Electronics Co., Ltd. owns the copyright of this manual.

No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, without the consent of Samsung Electronics Co., Ltd.

The information in this document is subject to change without notice due to improving the performance of the product.

Samsung Electronics shall not be liable for any data loss. Please take care to avoid losing any important data and backup your data to prevent any such data loss.

OS and Software Support

If you change the product's factory OS (Operating System) to another OS or if you install software which is not supported by the product's original factory OS, you will not receive any technical support, product exchange or refund. And a fee will be charged when requesting a service.

Please use your computer with the original factory OS. If you install an OS other than the factory OS, data may be deleted or the computer may not start.

Before You Start

About the Product Capacity Representation Standard

About the capacity representation of the storage

The capacity of the storage device (HDD, SSD) of the manufacturer is calculated assuming that 1KB=1,000 Bytes.

However, the operating system (Windows) calculates the storage device capacity assuming that 1KB=1,024 Bytes, and therefore the capacity representation of the HDD in Windows is smaller than the actual capacity due to the difference in capacity calculation.

(E.g. For a 80GB HDD, Windows represents the capacity as 74.5GB,
 $80 \times 1,000 \times 1,000 \text{ byte} / (1,024 \times 1,024 \times 1,024) \text{ byte} = 74.505\text{GB}$)

In addition, the capacity representation in Windows may be even smaller because some programs such as Recovery may reside in a hidden area of the HDD.

About Memory Capacity Representation

The memory capacity reported in Windows is less than the actual capacity of memory.

This is because BIOS or a video adapter uses a portion of memory or claims it for further use.

(E.g. For 1GB(=1,024MB) memory installed, Windows may report the capacity as 1,022MB or less)

Safety Precautions

For your security and to prevent damage, please read the following safety instructions carefully.



Since this is commonly applied to Samsung Computers, some pictures may differ from actual products.



Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

Installation Related



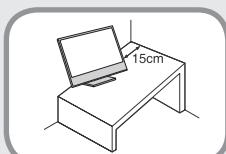
Do not install the product in places exposed to humidity such as a bathrooms.

There is a danger of electric shock. Use the product within the operating conditions specified in the Manufacturers User Manual.



Keep the plastic bags out of the reach of children.

There is a danger of suffocation.



Keep a distance of 15cm or more between the computer and the wall and do not place any objects between them.

This may increase the internal temperature of the computer and may cause an injury.



Do not install the computer on a slant or a place prone to vibrations, or avoid using the computer in that location for a long time.

This increases the risk that a malfunction or damage to the product will occur.



Do not touch the computer vents or the connected AC adapter for extended periods while the computer is on.

Contact with the vent or the connected AC adapter for extended periods may result in low-temperature burns, such as redness on the skin.



Avoid blocking the vent at the bottom or side of the computer when using it on a bed or cushion.

If the vent is blocked, there is a danger of damaging the computer or overheating the inside of the computer.

Safety Precautions



Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

Power Related

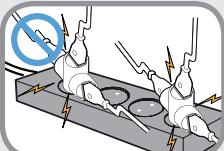


The power plug and wall outlet figures may differ depending on the country specifications and the product model.



Do not touch the main plug or power cord with wet hands.

There is a danger of electric shock.



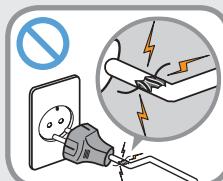
Do not exceed the standard capacity (voltage/current) of a multiplug or power outlet extension when using it for the product.

There is a danger of electric shock or fire hazard.



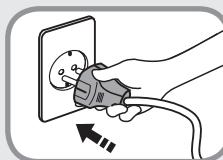
If the power cord or power outlet makes a noise, disconnect the power cord from the wall outlet and contact a service center.

There is a danger of electric shock or fire hazard.



Do not use a damaged or loose main plug or power cord or power outlet.

There is a danger of electric shock or fire hazard.



Plug the power cord firmly into the power outlet and AC adapter.

Failure to do so may cause fire hazard.



Do not unplug the power cord by pulling the cable only.

If the cord is damaged, it may cause electric shock.



Do not bend the power cord excessively or do not place a heavy object over the power cord. It is especially important to keep the power cord out of reach of infants and pets.

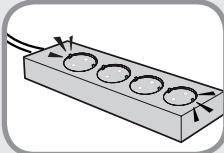
If the cord is damaged, it may cause electric shock or fire.

Safety Precautions



Warning

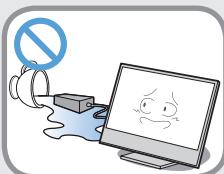
Failure to follow instructions marked with this symbol may cause personal injury and even fatality.



Connect the power cord to an outlet or multiple power plug (extended cable) with a ground terminal.

Failure to do so may result in electric shock.

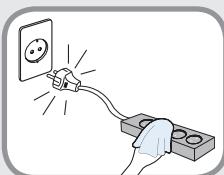
When the power supply is ungrounded, the current may leak resulting in electric shock.



If water or other conductive substances (e.g. liquid, dust, metal powders, pencil leads, etc.) enter the product, disconnect the power cord and contact the Samsung service center.

If the notebook computer has an external type (removable) battery, separate the battery also.

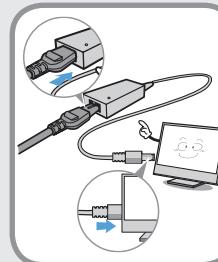
Damage to the device within the computer may cause electric shock or fire hazard.



Keep the power cord or outlet clean so that they are not covered with dust.

Failure to do so may result in fire.

AC Adapter Usage Precautions



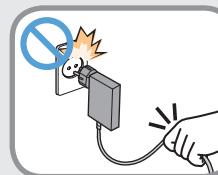
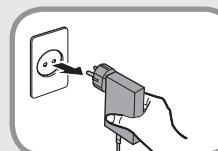
Connect the power cord to the AC adapter firmly.

Otherwise, there is a danger of fire due to an incomplete contact.



Do not place heavy objects or step onto the power cord or AC adapter to avoid damaging the power cord or AC adapter.

If the cord is damaged, there is a danger of electric shock or fire.



Unplug the wall-mount AC adapter (adapter and plug intergrated type) from the wall outlet while holding the body and pulling it in the direction of the arrow.

If you unplug the adapter by holding and pulling the cable, the adapter may be damaged and an electric shock, explosive sound or spark may occur as a result.

Safety Precautions



Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.

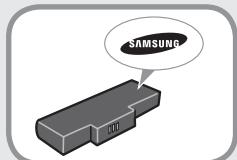
Battery Usage Related

! Please charge the battery fully before using the computer for the first time.



Keep the battery out of the reach of infants and pets, as they could put the battery into their mouths.

There is a danger of electric shock or choking.



Use an authorized battery and AC adapter only.

Please use an authorized battery and adapter approved by Samsung Electronics.

Unauthorized batteries and adapters may not meet the proper safety requirements and may cause problems or malfunctions and result in an explosion or fire.



Do not use the computer in a badly ventilated location such as on bedding, on a pillow or cushion, etc, and do not use it in a location such as room with floor heating as it may cause the computer to overheat.

Take care that the computer vents (on the side or the bottom) are not blocked especially in these environments. If the vents are blocked, the computer may overheat and it may cause a computer problem, or even an explosion.



Do not use the computer in a humid location such as a bathroom or sauna.

Please use the computer within the recommended temperature and humidity range (10~35°C, 20~80% RH).



Do not close the LCD panel and put the computer into your bag to move it when it is still turned on.

If you put the computer into your bag without turning it off, the computer may overheat and there is a danger of fire. Shut the computer down properly before moving it.

Safety Precautions



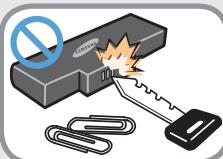
Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.



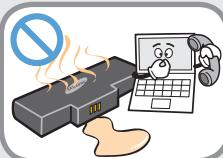
Never heat the product(or battery) or put the product(or battery) into a fire. Do not put or use the product(or battery) in a hot location such as a sauna, inside a vehicle exposed to the heat, and so on.

There is a danger of an explosion or fire.



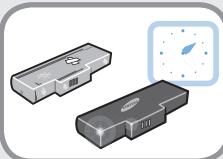
Take care not to allow metal objects such as a key or clip to touch the battery terminal (metal parts).

If a metal object touches the battery terminals, it may cause excessive current flow and it may damage the battery, or result in a fire.



If liquid leaks out of the product(or battery) or there is a funny smell coming from the product(or battery), remove the product(or battery) the computer and contact a service center.

There is a danger of an explosion or fire.



To use the computer safely, replace a dead battery with a new, authorized battery.

Usage Related



Disconnect all cables connected to the computer before cleaning it. If your notebook is external & removable battery type, remove the external battery.

There is a danger of electric shock or damage to the product.



Do not connect a phone line connected to a digital phone to the modem.

There is a danger of a electric shock, fire or damage to the product.



Do not place any container filled with water or chemicals over or near the computer.

If water or chemicals enter the computer, this may cause fire or electric shock.



If the computer is broken or dropped, disconnect the power cord and contact a service center for a safety check.

If the notebook computer has an external type (removable) battery, separate the battery also.

Using a broken computer may cause electric shock or fire hazard.

Safety Precautions



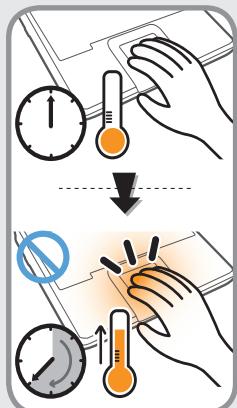
Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.



Avoid direct sunlight when the computer is in an air-tight location such as inside a vehicle.

There is a danger of a fire hazard. The computer may overheat and also present opportunity to thieves.



Do not use your computer for long periods of time while any part of your body is making direct contact with it. The temperature of the product may increase during normal operation.

This may result in harming or burning your skin.

Upgrade Related



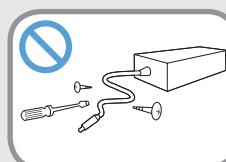
Be sure to upgrade the computer by yourself only if you have sufficient knowledge and ability.

If this is not the case, ask for assistance from the service center or an authorized engineer for the upgrade.



Be sure to upgrade only the parts specified in the user manual according to the procedures described in the user manual.

Do not disassemble any other parts or devices by yourself. There is a danger of a electric shock, fire or damage to the product.



Never disassemble the power supply or AC adapter.

There is a danger of electric shock.



When removing the RTC (Real Time Clock) battery, keep it out of the reach of children as they could touch and/or swallow it.

There is a danger of choking. If a child has swallowed it, contact a doctor immediately.

Safety Precautions



Warning

Failure to follow instructions marked with this symbol may cause personal injury and even fatality.



Before upgrading the computer, be sure to shutdown the computer first and then separate all connected cables. If the notebook computer has an external type (removable) battery, separate the battery, too.

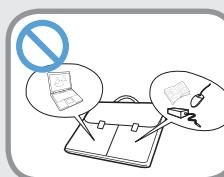
Failure to do so may cause electric shock.

Follow the instructions for the relevant location (e.g. airplane, hospital, etc.) when using a wireless communication device (wireless LAN, Bluetooth, etc.).



Avoid exposing a drive to magnetic fields. Security devices with magnetic fields include airport walk-through devices and security wands.

The airport security devices that check carry-on luggage, such as conveyor belts, use x-rays instead of magnetism and will not damage a drive.



When carrying the notebook computer with other items, such as the adapter, mouse, books etc, take care not to press anything against the notebook computer.

If a heavy object is pressed against the notebook computer, a white spot or stain may appear on the LCD. Therefore, take care not to apply any pressure to the notebook.

In this case, place the notebook computer in a separate compartment away from the other objects.

Security and Movement Related

Safety Precautions



Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Installation Related

Do not block the ports (holes), vents, etc. of the product and do not insert objects.

Damage to a component within the computer may cause electric shock or fire.

When using the computer with it lying on its side, place it so that the vents face upwards.

Failure to do so, may cause the internal temperature of the computer to rise and the computer to malfunction or halt.

Do not place a heavy object over the product.

This may cause a problem with the computer. In addition, the object may fall and cause injury, or damage the computer.

Battery Usage Related

Dispose of worn-out batteries properly.

- There is a danger of fire or explosion.
- The battery disposal method may differ depending on your country and region. Dispose of the used battery in an appropriate way.

Do not throw or disassemble the battery and do not put it into water.

This may cause an injury, fire or explosion.

Use only a battery authorized by Samsung Electronics.

Failure to do so may cause an explosion.

Avoid contact with metal objects such as car keys or clips when keeping or carrying a battery.

Contact with a metal may cause excessive current and a high temperature and may damage the battery or cause a fire.

Charge the battery according to the instructions in the manual.

Failure to do so, may cause an explosion or fire from damage to the product.

Do not heat the product(or battery) or expose it to heat (e.g. inside a vehicle during the summer).

There is a danger of explosion or fire.

Safety Precautions



Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Usage Related

Do not place a candle, light cigar, etc. over or on the product.

There is a danger of fire.

Use a wall outlet or multi-plug with a grounding part.

Failure to do so may cause electric shock hazard.

Make sure to have the product tested by a safety service engineer after repairing the product.

Authorized Samsung Repair Centers will carry out safety checks after a repair. Using a repaired product without testing it for safety may cause an electric shock or fire.

In case of lightning, immediately turn the system off, disconnect the power cord from the wall outlet and phone line from modem. Do not use a modem or phone.

There is a danger of electric shock or fire.

Do not use your computer and AC-Adapter on your lap or soft surfaces.

If the computer temperature increases, there is a danger of burning yourself.

Connect only permitted devices to the connectors or ports of the computer.

Failure to do so, may cause electric shock and fire.

Close the LCD panel only after checking if the notebook computer is turned off.

The temperature may rise and it may cause overheating and deformation of the product.

Do not press the Eject Button while the CD-ROM drive is in operation.

You might lose data and the disk might be suddenly ejected and could cause an injury.

Take care not to drop the product while using it.

This may cause personal injury or loss of data.

Do not touch the antenna with electricity facility such as the power outlet.

There is a danger of electric shock.

When handling computer parts, follow the instructions on the manual supplied with the parts.

Failure to do so, may cause damage to the product.

Safety Precautions



Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

If the computer emits smoke, or there is a burning smell, disconnect the power plug from the wall outlet and contact a service center immediately. If your notebook is external & removable battery type, remove the external battery.

There is a danger of fire.

Do not use a damaged or modified CD.

There is a danger of damaging the product or personal injury.

Do not insert your fingers into the PC Card Slot.

There is a danger of injury or electric shock.

Use recommended computer cleansing solution when cleaning the product and only use the computer when it is completely dried.

Failure to do so may cause electric shock or fire.

Emergency disk eject method using paperclip should not be used while the disk is in motion. Make sure to use the emergency disk eject method only when the Optical Disk Drive has stopped.

There is a danger of injury.

Do not place your face close to the Optical Disk Drive tray when it is operating.

There is a danger of injury due to an abrupt ejection.

Check CDs for cracks and damage prior to use.

It may damage the disc and cause disorder of device and injury of user.

Do not leave the product in a location exposed to magnetic fields.

- A magnetic field may cause the product to work abnormally or the battery to discharge.
- The information saved on the magnetic tape of a credit card, phone card, bankbook, transportation tickets and so on can be damaged by a computer's electromagnetic field.

Safety Precautions



Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Upgrade Related

Take care when touching the product or parts.

The device may be damaged or you may be injured.

Take care not to throw or drop a computer part or device.

This may cause injury or damage to the product.

Make sure to close the computer cover before connecting the power after a reassembly.

There is a danger of electric shock if your body touches an internal part.

Use parts authorized by Samsung Electronics only.

Failure to do so, may cause fire or damage the product.

Never disassemble or repair the product by yourself.

There is a danger of electric shock or fire.

To connect a device that is not manufactured or authorized by Samsung Electronics, enquire at your service center before connecting the device.

There is a danger of damaging the product.

Storage and Movement Related

When moving the product, turn the power off and separate all connected cables first.

The product might be damaged or users may trip over the cables.

**For long periods of not using the notebook computer, discharge the battery and preserve as it is detached.
(For external & removable battery type)**

The battery will be preserved at its best condition.

Do not operate or watch the computer while driving a vehicle.

There is a danger of a traffic accident. Please concentrate on driving.

Be careful when closing the LCD panel.

Closing the LCD panel with any object (such as a pen) placed on the device's keyboard may break the LCD panel.

Safety Precautions



Caution

Failure to follow instructions marked with this symbol may cause slight injury or damage to the product.

Cautions on Preventing Data Loss (Hard Disk Management)

Take care not to damage the data on a hard disk drive.

- A hard disk drive is so sensitive to external impact that an external impact may cause loss of data on the surface of the disk.
- Take extra care, because moving the computer or an impact on the computer when it is turned on may damage the data of the hard disk drive.
- The company is not liable for any loss of data on the hard disk drive.

Causes that may damage the data of a hard disk drive and the hard disk drive itself.

- The data may be lost when an external impact is applied to the disk while disassembling or assembling the computer.
- The data may be lost when the computer is turned off or reset by a power failure while the hard disk drive is operating.
- The data may be lost and irrecoverable due to a computer virus infection.
- The data may be lost if the power is turned off while running a program.
- Sudden impact or movement to the computer while the hard disk drive is operating, may cause files to be corrupted or bad sectors on the hard disk.

To prevent data loss due to damage to the hard disk drive, please backup your data frequently.

Safety Precautions

Using the Power Supply in an Airplane

Since the power outlet type differs depending on the type of airplane, connect the power appropriately.

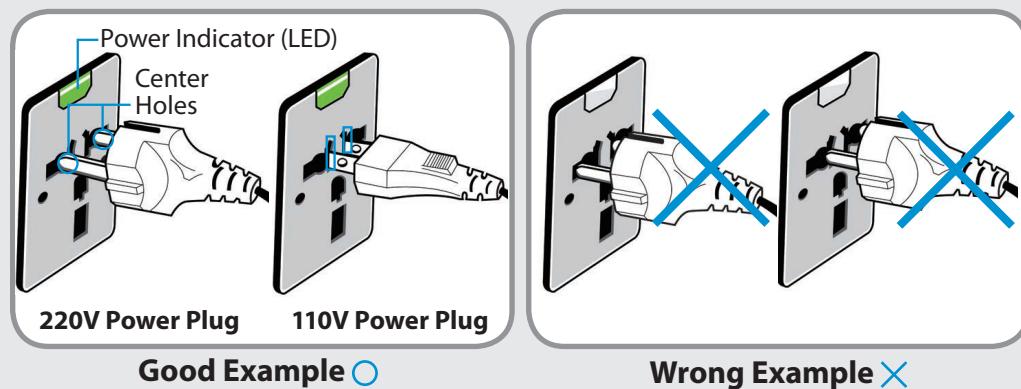


Since the representative figures of the power plug and the auto adapter are used, they may differ from the actual parts.

When Using the AC Power Plug

Connect the power plug pins perpendicular into the center of the power outlet.

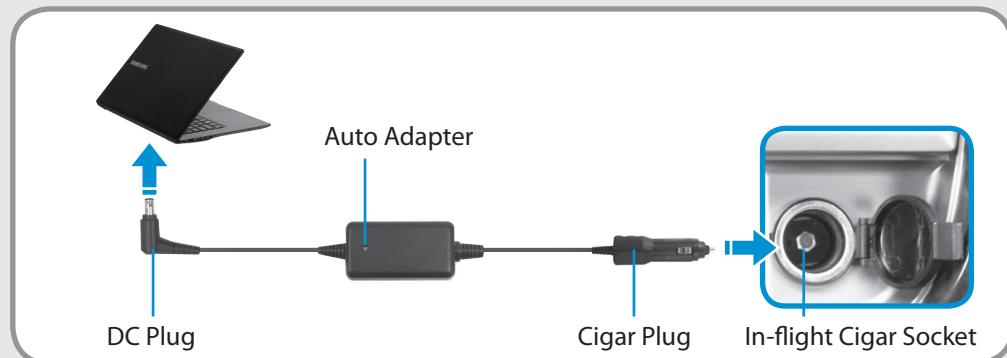
- If the plug pins are not inserted into the center of the holes, the plug pins are only inserted up to half their length. In this case, reconnect the power plug.
- You have to insert the power plug into the outlet when the power indicator (LED) of the power outlet is lit green. If the power is connected properly, the power indicator (LED) remains green. Otherwise, the power indicator (LED) is turned off. In this case, unplug the power, check if the power indicator (LED) is green, and then reconnect the power plug.



Safety Precautions

When Using the Auto Adapter

When a cigar socket is provided, you have to use the auto adapter (optional). Insert the cigar plug of the auto adapter into the cigar socket and connect the DC plug of the auto adapter to the power input port of the computer.



When Using the Airplane Charging Coverter

Depending on the airplane, you have to use the auto adapter and charging converter. Connect the airplane charging converter (optional) to the auto adapter (optional) and then insert the airplane power input jack into the power outlet.



Proper Posture During Computer Use

Maintaining a proper posture during computer use is very important to prevent physical harm.

The following instructions are about maintaining a proper posture during computer use developed through human engineering. Please read and follow them carefully when using the computer.

Otherwise, the probability of (RSI: Repetitive Strain Injury) from repeated operations may increase and serious physical harm may be caused.



- The instructions in this manual have been prepared so that they can be applied within the coverage of general users.
- If the user is not included in the coverage, the recommendation is to be applied according to the user's needs.

- Do not use the computer while you are lying down, but only while you are sitting down.
- Do not use the computer on your lap. If the computer temperature increases, there is a danger of burning yourself.
- Work while keeping your waist straight.
- Use a chair with a comfortable back.
- Keep the center of your leg weight not on the chair but on your feet when you are sitting on a chair.
- To use the computer while talking over the telephone, use a headset. Using the computer with the phone on your shoulder is bad for posture.
- Keep frequently used items within a comfortable work range (where you can reach them with your hands).

Proper Posture

Adjust the heights of desks and chairs appropriate to your height.

The heights are to be adjusted so that your arm forms a right angle when you place your hand over the keyboard while sitting down on a chair.

Adjust the height of chair so that your heel is comfortably placed on the floor.



Proper Posture During Computer Use

Eye Position

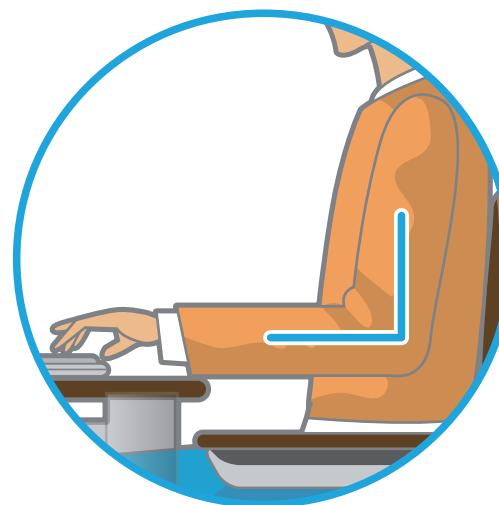
Keep the monitor or LCD away from your eyes by at least 50cm.



- Adjust the height of the monitor and the LCD screen so that its top height is equal to or lower than your eyes.
- Avoid setting the monitor and LCD excessively bright.
- Keep the monitor and LCD screen clean.
- If you wear glasses, clean them before using the computer.
- When entering contents printed on a paper into the computer, use a static paper holder so that the height of the paper is almost equal to that of the monitor.

Hand Position

Keep your arm at a right angle as shown by the figure.



- Keep the line from your elbow to your hand straight.
- Do not place your palm over the keyboard while typing.
- Do not hold the mouse with excessive force.
- Do not press the keyboard, touchpad or mouse with excessive force.
- It is recommended connecting an external keyboard and mouse when using the computer for long periods of time.

Proper Posture During Computer Use

Volume Control (Headphones and Speakers)

Check your volume first to listen to music.



Check your volume!



- Check if the volume is too loud before using headphones.
- It is not recommended using headphones for long periods of time.
- Any deviation from the equalizer default setting could cause hearing impairment.
- The default setting can be changed through software and driver updates without your intervention. Please check the equalizer default setting before first usage.

To prevent possible hearing damage, do not listen at high volume levels for long periods.



Use Time (Break Time)

- Take a break for 10 minutes or more after a 50-minute period when working for more than one hour.

Illumination

- Do not use the computer in dark locations. The illumination level for computer use must be as bright so for reading a book.
- Indirect illumination is recommended. Use a curtain to prevent reflection on the LCD screen.

Operation Condition

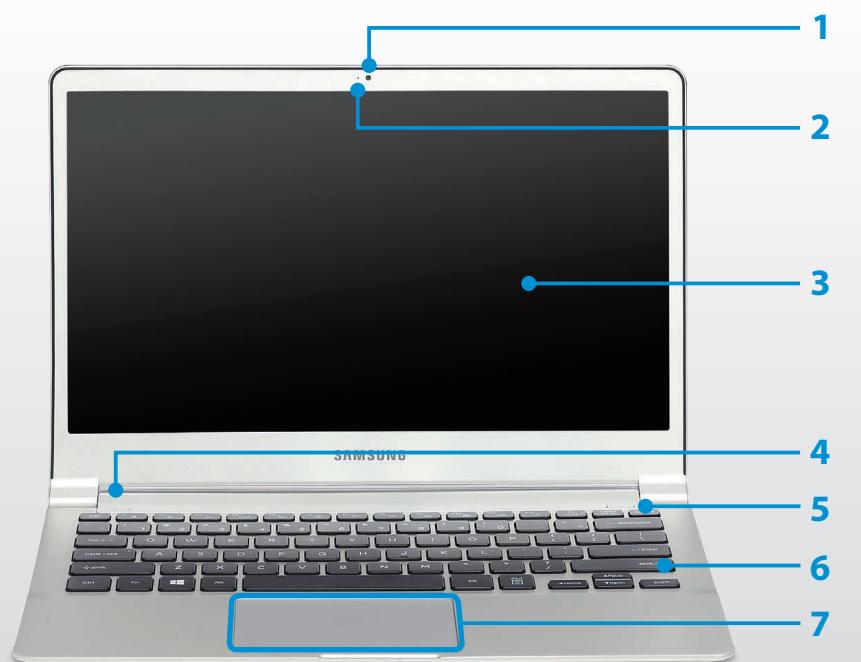
- Do not use the computer in hot and humid locations.
- Use the computer within the allowed temperature and humidity range specified in the User Manual.

Overview

Front view

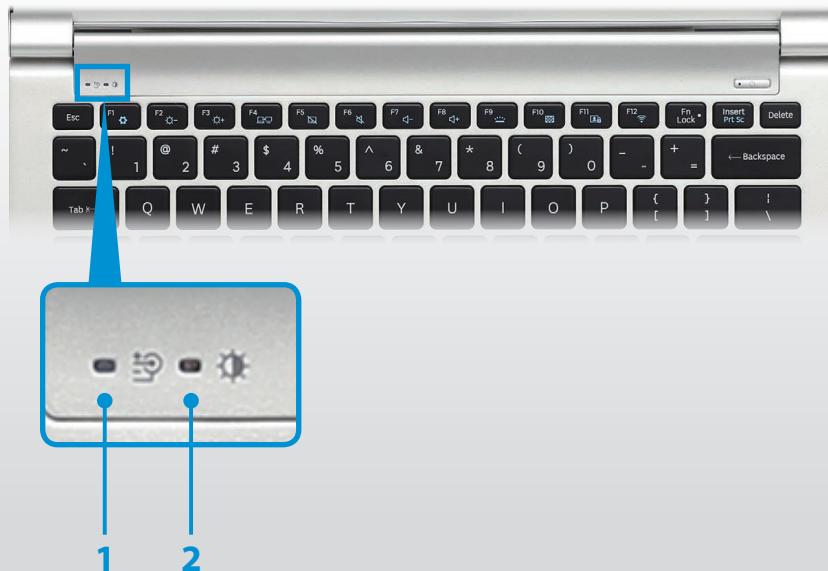


- Features or options may differ depending on the model.
- The items marked as optional may not be provided or may be provided in different locations.
- Since some space on the SSD is reserved for system recovery and operations, the displayed capacity of the SSD may be less than the actual capacity.



| | |
|---|---|
| 1 Camera (Optional) | Using this camera, you can take still pictures and record video. |
| 2 Camera indicator light | This indicates the camera operating status. |
| 3 LCD | The screen images are displayed here. |
| 4 Status indicators and sensors (Optional) | Shows the operating status of the computer. The corresponding operating LED is lit when the corresponding function operates. |
| 5 Power Button/ Power Button LED | Turns the computer on and off. When the computer is on, the power button LED is lit. |
| 6 Keyboard | A device to enter data by pressing the keys. |
| 7 Touchpad | A device to enter data by pressing the keys. |

Operating indicator light



1 Charge Status

This shows the power source and the battery charge status.

Red: Charging

Green: Fully charged

No color: AC adapter not connected

2 Illumination Sensor (Optional)

This sensor detects the ambient illumination of the PC.

If the ambient illumination becomes low, the backlight of the computer will turn on automatically.

If the ambient illumination becomes high, the backlight of the computer will turn off automatically.

Right view



| | | |
|----------|--|--|
| 1 | Memory card slot asD (Optional) | Insert a memory card into the slot. |
| 2 | Microphone | You can use the built-in microphone. |
| 3 | Monitor Port | A port used to connect a monitor, TV or projector supporting a 15pin D-SUB interface.  You can connect a VGA adapter (optional). |
| 4 | Ear-set / headset Jack | This is the jack for connecting an earset or headset. |
| 5 | USB 3.0 port | You can connect USB devices to the USB port such as a keyboard/mouse, digital camera, etc. |

Left view

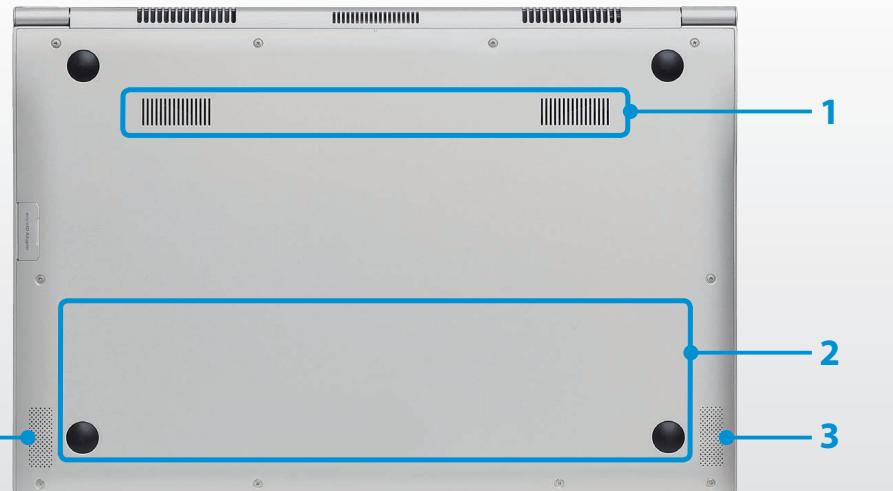


About the chargeable USB port

- It may take longer to charge the battery when charging a USB device.
- The battery power level may be reduced when charging a USB device while the computer is powered by the battery.
- The charging status of the USB device is not displayed on the computer.
- This feature may not be available with some USB devices.

| | |
|--|--|
| 1 DC Jack | A jack to connect the AC adapter that supplies power to the computer. |
| 2 Chargeable USB 3.0 Port | This is a chargeable USB port that can be used to connect and charge a USB device.  When the AC adapter is connected, it may be inconvenient to use the USB port. In this case, purchase and use a USB 3.0 extension cable or use the USB ports on the right side. |
| 3 Micro HDMI Port HDMI (Optional) | Used to connect an micro HDMI cable to an external device. You can enjoy digital video and audio by connecting the computer to a TV. |
| 4 Wired LAN Port | Connect the Ethernet cable to this port.  You can use wired LAN by using the LAN adapter (Optional). |

Bottom view



1 Fan vents

The internal heat of the computer is emitted through these holes.

If the vents are blocked the computer may overheat. Avoid blocking the vents as this may be dangerous.

2 Internal battery

Provides power to the computer when not connected to an AC adapter.

To remove or replace the internal battery, take it to the Samsung Service Center. You will be charged for this service.

3 Speaker

A device used to generate sound.



After replacing the bottom of the computer, the model name, serial number and some logos will no longer be present. For more information, contact the Samsung Service Center to request assistance.

Turning the Computer On and Off

Turning the computer on

Turning on

- 1 Before turning on the computer, charge the battery.
- 2 Open the LCD panel.



- 3 The computer turns on automatically when the LCD panel is opened.
If the computer does not turn on automatically, press the Power button.



 Set the device not to turn on the computer automatically when the LCD panel is opened.

1. Press the **Fn** + **F1** key combination to launch the **Easy Settings**.
2. Select **Boot Management** and deselect **Auto Booting** in the **Lid Open Action** section.

Turning the Computer On and Off

4 Activate Windows by following the on-screen instructions.

The Windows activation screen appears only when turning on the computer for the first time.

The computer's date and time may be incorrect when you turn it on for the first time. They may also be incorrect if the battery has been fully discharged or removed. To set the date and time, go to the desktop taskbar and right-click the clock area. Then, click **Adjust date/time** and set the current date and time.

Adjusting the screen brightness

When the computer runs on battery power, the LCD brightness is automatically set to low.

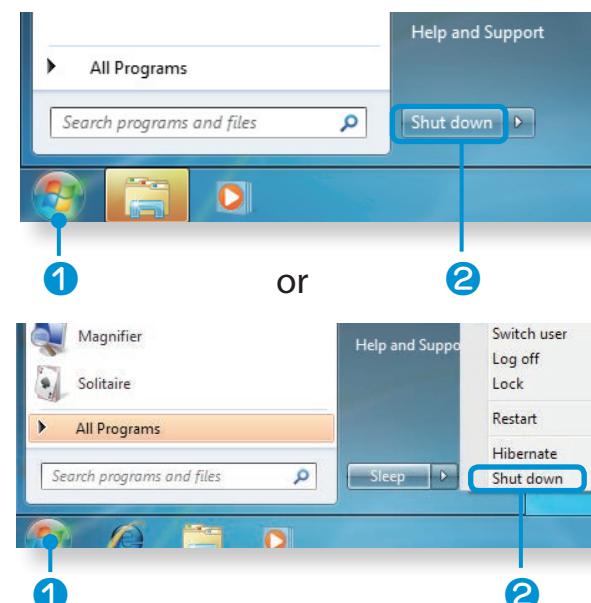
Press the **Fn** + **F3** key combination to increase the screen brightness.

Turning the computer off



- Since the procedures to turn the computer off may differ depending on the installed operating system, please turn the computer off according to the procedures for the purchased operating system.
- Save all your data before clicking on **Shut down**.
- If **Easy Settings** is installed, the system shutdown location may differ.

Click ① **Start** > ② **Shut down mode** to shutdown the computer.





Chapter 2. Using the computer

| | |
|---|-----------|
| Keyboard | 32 |
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| Adjusting the Volume | 47 |
| Wired Network | 48 |
| Wireless Network (Optional) | 51 |
| Using the TPM Security Solution (Optional) | 54 |

Keyboard

Shortcut key functions and procedures are discussed in the following sections.



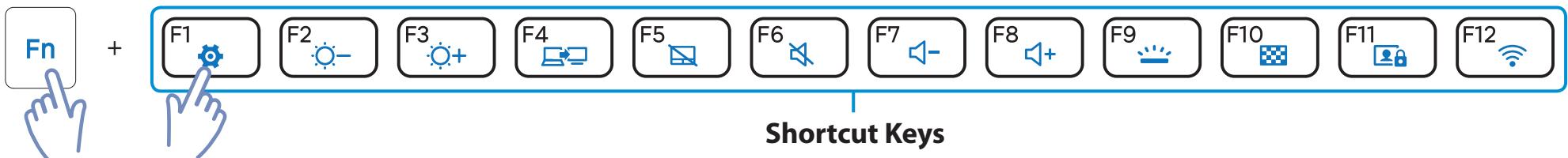
- The keyboard image may differ from the actual keyboard.
- The keyboard may differ depending on your country. The following mainly describes the shortcut keys.

Shortcut Keys

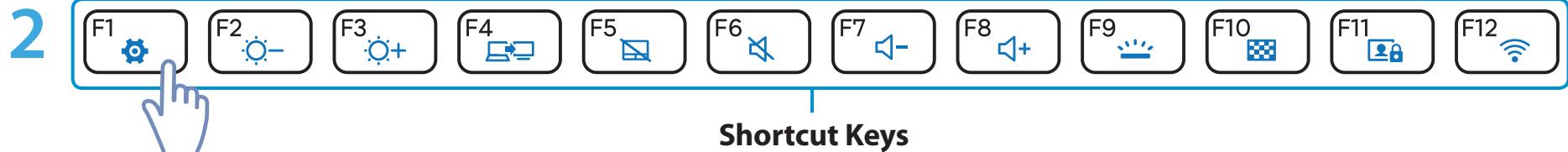
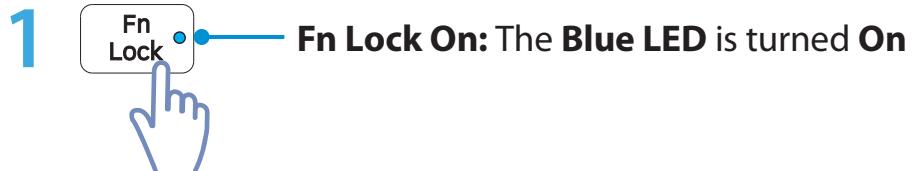
While pressing and holding the **Fn** key, press a **shortcut keys**.

Alternatively, press the **Fn Lock** key as well as a hot key to use the hot key functions more easily.

► Method 1



► Method 2



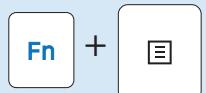
Keyboard

| Key/Icon | Description |
|---|--|
| F1  | Easy Settings: Launch the Easy Settings application. |
| F2  | |
| F3  | Screen brightness control: Adjust the brightness level. |
| F4  | LCD/External monitor: Switch between the LCD and an external display device when an external display device is connected to the computer. |
| F5  | Touchpad: Turn on or off the touchpad function. |
| F6  | Mute: Mute or unmute the audio. |
| F7  | |
| F8  | Volume Control: Adjust the volume level. |
| F9  | Keyboard backlight: Turn the keyboard backlight on or off. |
| F10  | Hide the screen or window by decreasing the brightness of the display. |
| F11  | Turn off the camera and sound recorder to prevent unauthorized access and illegal recording. |
| F12  | Wi-Fi: Turn a Wi-Fi network on or off. |

Keyboard

Other Function Keys (Optional)

- Performs the right-click mouse function (touchpad).



- If you press the **Fn Lock** key, you can use the hot key functions without pressing the **Fn** key.



If the hot keys do not work properly, you have to install the **Easy Settings**.

Touchpad

The touchpad provides the same function as a mouse and the left and right buttons of the touchpad plays the role of the left and right buttons of a mouse.

To use the touchpad, the touchpad driver is required.

The driver provided by the touchpad manufacturer is already installed in this product by default when you purchase this product. **When you reinstall Windows or change the operating system, using the driver provided by the corresponding manufacturer is recommended.**

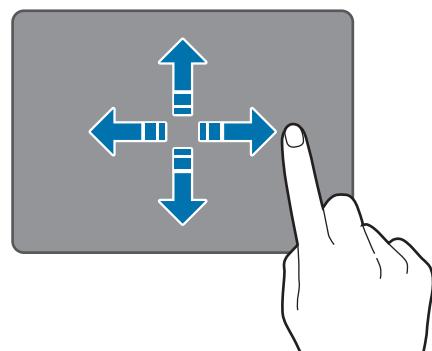


- Touch the touchpad with your fingers only. Anything other than your fingers, such as a ball-point pen, will not be recognized by the touchpad.
- If you touch the Touchpad or press the Touchpad buttons while booting up, the Windows boot time may be extended.

Basic Touchpad Functions

Moving the cursor on the screen

Place your finger on the touchpad slightly and move your finger. The mouse cursor will move accordingly. Move your finger in the direction you wish to move the cursor.

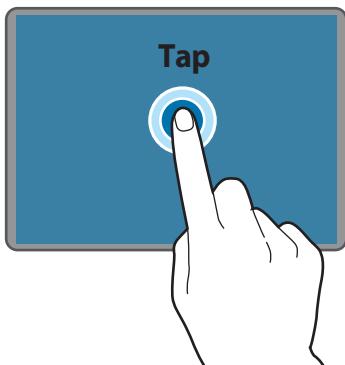


Touchpad

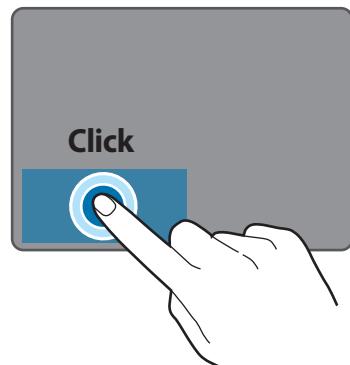
Click Function

Place a finger on the touchpad and click on an item once.

Alternatively, press the left button once quickly and release it.



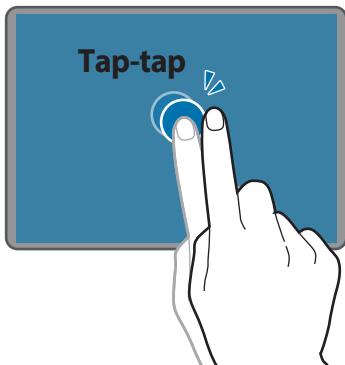
or



Double-Click Function

Put your finger on the touchpad and quickly tap twice with your finger on an item you want.

Alternatively, press the left touchpad button twice quickly.



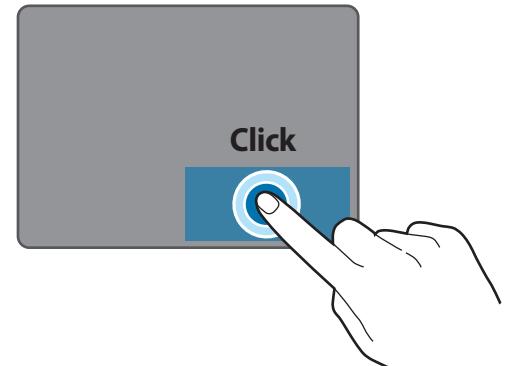
or



Right Button Function

This corresponds to clicking the right mouse button.

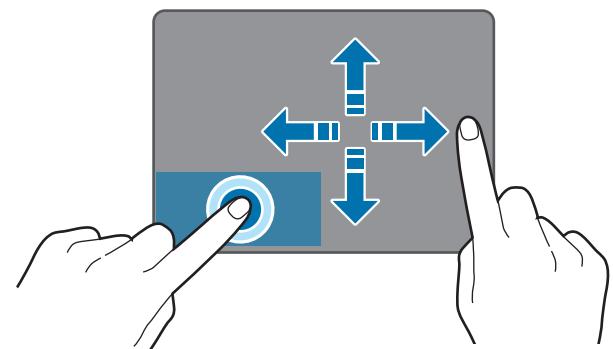
Press the right touchpad button once. The corresponding pop-up menu appears.



Drag Function

Dragging refers to moving an item to another place after selecting it.

Press and hold down the left touchpad button over an item you want to drag and move the item to the new location.



Touchpad

The Gesture Function of the Touchpad



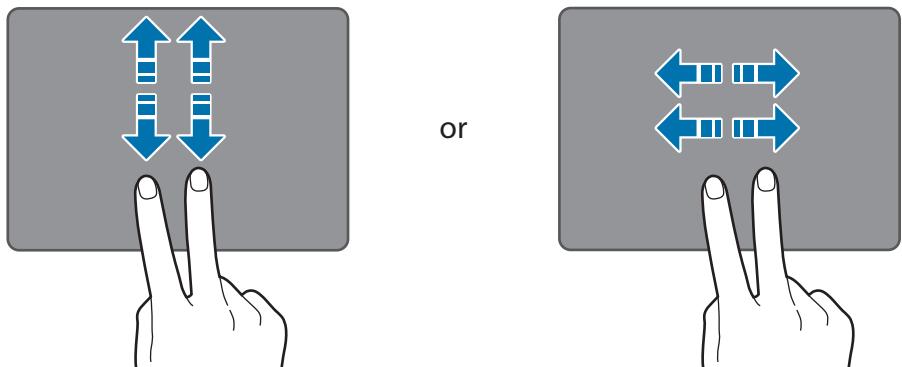
The Touchpad Gesture function may not be provided and the version of the function may differ depending on the model. Some usage procedures may differ depending on the version.

Using the Touchpad, you can use the following additional Gesture functions.

- **Scroll function**
- **Zoom functions**

The Scroll Function

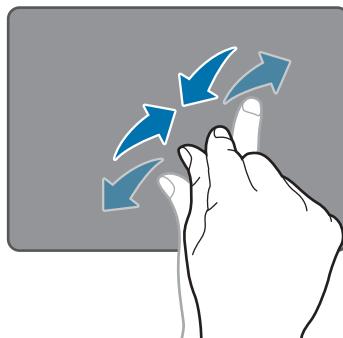
If you place two fingers over the Touchpad and move them up, down, left or right, the screen is scrolled up, down, left or right accordingly.



or

Zoom Functions

If you place two fingers over the Touchpad together or apart, the current image or text is zoomed in or out.



Touchpad

Touchpad On/Off Function

Locking with shortcut keys

If you want to use the mouse only without using the touchpad, you can turn the touchpad off.

To lock the touchpad function, press the  +  keys.

Alternatively, press the  key and then press the  key to turn the touchpad function off.

External CD/DVD drive

This computer supports external CD/DVD drives with USB interfaces (optional). Check if the interface type of the external CD-ROM drive is a USB type.

Connecting the drive

Connect the drive to the USB port of the computer.



Inserting and ejecting a CD or DVD

- 1 Press the Eject button to open the tray.



| | |
|---|------------------------|
| 1 | Emergency aperture |
| 2 | Eject button |
| 3 | Status indicator light |

- 2 Insert a CD or DVD.
- 3 Push the tray inward until it clicks.
The status indicator turns on.

External CD/DVD drive



Do not insert warped, cracked, or heavily scratched disks.

Doing so can damage the drive.

Do not eject disks while the status indicator light is on.



Your external drive may differ from the images used in this manual.

If the drive will not open when the power is off, insert the end of a paper clip (☞) into the emergency aperture to open the tray manually.

When cleaning a CD or DVD, wipe it with a soft cloth from the inside edge towards the outside edge.

Reading and writing speeds may differ depending on the condition and type of media.

A CD or DVD that is not in the shape of a circle is not recommended.

Memory Card Slot (Optional)

Use a memory card to transfer data to other devices, such as digital cameras or MP3 players. Memory cards are sold separately.

Purchase a memory card with the necessary capacity for the requirement.

This computer supports the following types of memory cards.

| Abbreviation | Description |
|--------------|--|
| SD | Secure Digital |
| mini SD | mini Secure Digital |
| micro SD | micro Secure Digital |
| SDHC | Secure Digital High Capacity |
| mini SDHC | mini Secure Digital High Capacity |
| micro SDHC | micro Secure Digital High Capacity |
| SDXC | Secure Digital eXtended Capacity |
| micro SDXC | micro Secure Digital eXtended Capacity |

To use a mini or micro card, insert the card into an adapter before inserting it into the memory card slot.



- Some memory cards may not be fully compatible with the computer. Using an incompatible card may damage the computer or the memory card, or corrupt the data stored in it.
- Use caution to insert the memory card in the indicated direction.
- Store the card separately to prevent losing the card when moving the computer.
- Memory card speeds vary.

Memory Card Slot (Optional)

Inserting a memory card

1 If a dummy card or a memory card adapter is inserted in the memory card slot, remove it.

2 Insert a memory card into the memory card slot in the indicated direction.

Use a memory card adapter to insert a micro memory card into the memory card slot.

For mini memory cards, use a mini card adapter.



A memory card adapter is an optional item and may not be provided with some models.



3 Select the pop-up message to open the memory card folder.

If a pop-up message appears, click the corresponding window > **Continue without scanning**.

4 Select **Open folder to view files**.

5 Save, move, or delete data on the memory card.

The memory card folder opens only on the desktop.

Removing a memory card

Grasp the end of the card and pull it out of the slot.

Memory Card Slot (Optional)

Formatting a memory card

Format the memory card to remove all data or before using it for the first time.

 Formatting a memory card deletes all data saved on the card. If necessary, back up important data before formatting the card.

- 1 Click **Start**  > **Computer**.
- 2 Right-click the memory card drive, and then select **Format**.
- 3 Select **Start**.



- To use a memory card to exchange data with a digital device, such as a digital camera, formatting the data with the digital device is recommended.
- When trying to use a formatted memory card in another digital device, format the memory card again in the device.
- Inserting and removing a memory card repeatedly may damage the memory card.
- Secure Digital Input Output (SDIO) is not supported.
- If the write-protect tab is in the locked position, you cannot format, write, or delete data on the card.

Connecting an External Display Device

If you connect an external display device such as a monitor, TV, projector, etc., you can view the picture on the wider screen of the external device when you give a presentation or watch a video or movie.

The computer supports two types of ports: D-SUB monitor port and Micro HDMI port.

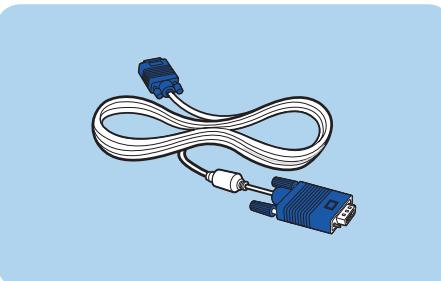
Since the visual quality is higher for Micro HDMI than D-SUB, if more than one port is available, connect the port that provides the higher visual quality.



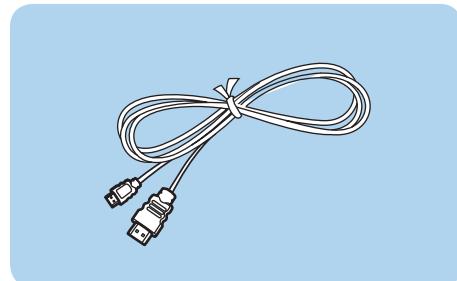
- Before you start, check the port and cable of the external display device and then connect the display device to the computer.
- Due to restrictions of the operating system the DualView function is not supported for Windows 7 Starter.

About the connection cable

Users should additionally purchase the necessary connection cables.



Analog Monitor (D-SUB) Cable



Micro HDMI Cable

Connecting to the monitor port (Optional)

Connect an external monitor, TV, or projector that supports the D-SUB interface to display the image on a wider screen.

You can give better presentations by connecting the computer to a projector.

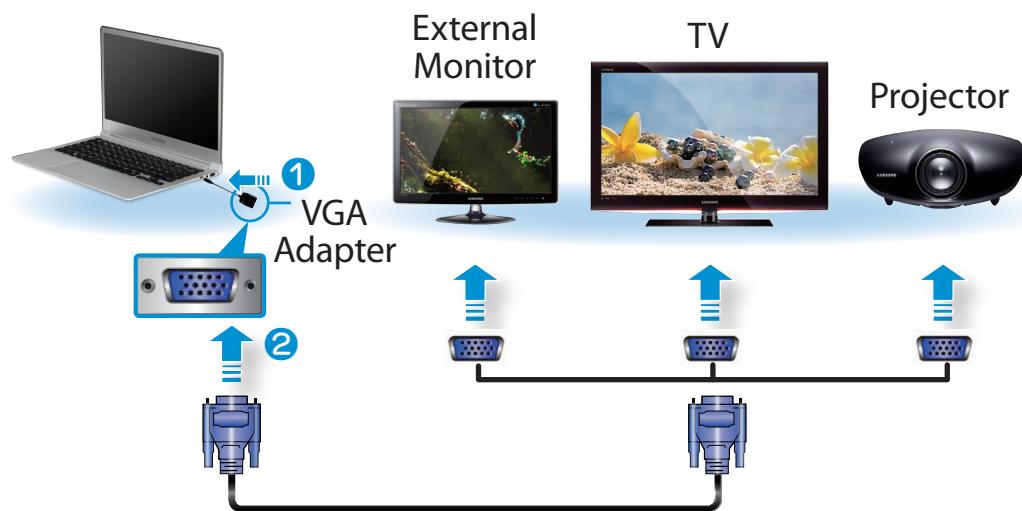


The VGA adapter is optional and to be purchased.

Connecting an External Display Device

1 Connect the VGA adapter to the monitor port of the computer.

Connect the VGA cable (15-pin) to the connected VGA adapter and then connect the other end of the VGA cable to the D-SUB port of the monitor or the TV.



2 Connect the power cord of the connected monitor, TV or projector and turn the power on.

Change your TV to external device mode when connecting to the TV.

3 Press the **Fn** + **F4** key combination once. Then the setting screen appears where you can select the monitor mode.

Since pressing the **F4** key while holding down the **Fn** key changes the selection, select a display device.

| | |
|-----------------------|--|
| Computer only | |
| Duplicate | |
| Extend | |
| Projector only | |



Alternatively, to set up dual view:

Open the **Display Settings** window in the Control Panel, select **Monitor 2** and select the **Expand to fit to this monitor** checkbox to set dual view. For more detailed information, refer to the Windows online help.

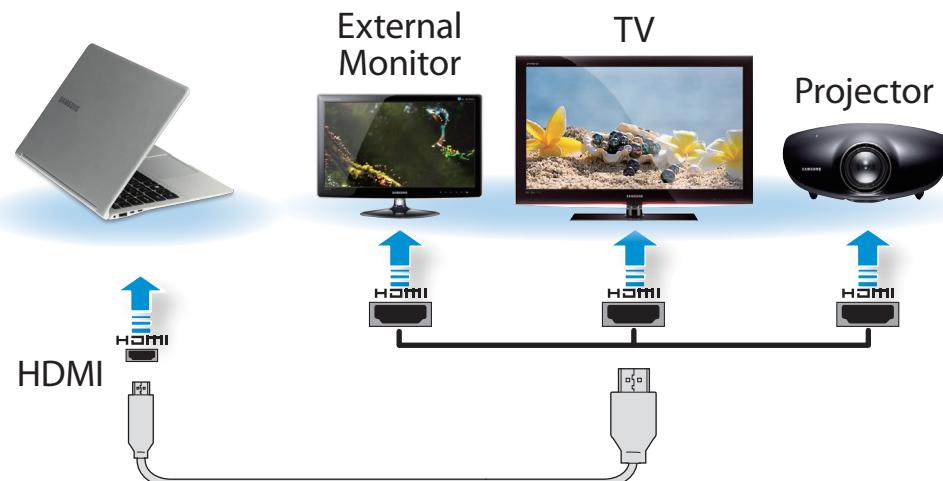
Connecting an External Display Device

Connecting through the HDMI port (Optional)

By connecting the computer to a TV with a HDMI port, you can enjoy both a high visual quality and a high sound quality.

After connecting a TV through HDMI, you have to configure the screen and sound.

- 1 Connect the Micro HDMI cable to the HDMI port of the TV.



- This is only supported for models that support a TV output port (HDMI).
- When a TV provides more than one HDMI port, connect the computer to the **DVI IN** port.
- When connecting the computer to a TV, switch the external input mode of the TV to **HDMI**.

- 2 Press the **Fn** + **F4** key combination once. Then the setting screen appears where you can select the monitor mode.
Since pressing the **F4** key while holding down the **Fn** key changes the selection, select a display device.

| | |
|-----------------------|---|
| Computer only |  |
| Duplicate |  |
| Extend |  |
| Projector only |  |



- External Monitor / TV is not supported in the DOS Command Prompt window.

Adjusting the Volume

You can adjust the volume using the keyboard and the volume control program.

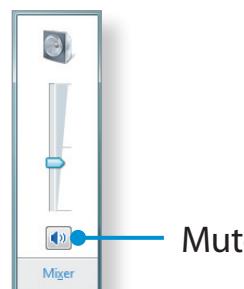
Adjusting the Volume using the Keyboard

Fn + **F7**  or **Fn** + **F8** 

Alternatively, press the **Fn** + **F6**  key combination to turn the volume on or off.

Adjusting the Volume using the Volume Adjustment Program

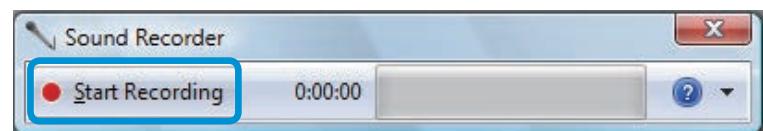
Click the Volume icon  on the taskbar and slide the volume control bar to adjust the volume.



Using the Sound Recorder

The procedures to record sound using the Windows Recorder are described below.

- 1 Connect a microphone to the Ear-set Jack or Headset Jack. You can also use the internal MIC.
- 2 Right-click over the **Volume** icon  on the taskbar and select **Recording Device**.
- 3 Check if the microphone is set as the default recording device. If this is the case, it is already set as the default device. If not, right-click over the microphone and select **Set default**.
- 4 Click **Start > All Programs > Accessories > Sound Recorder** and click **Start recording** to start a recording.



Wired Network

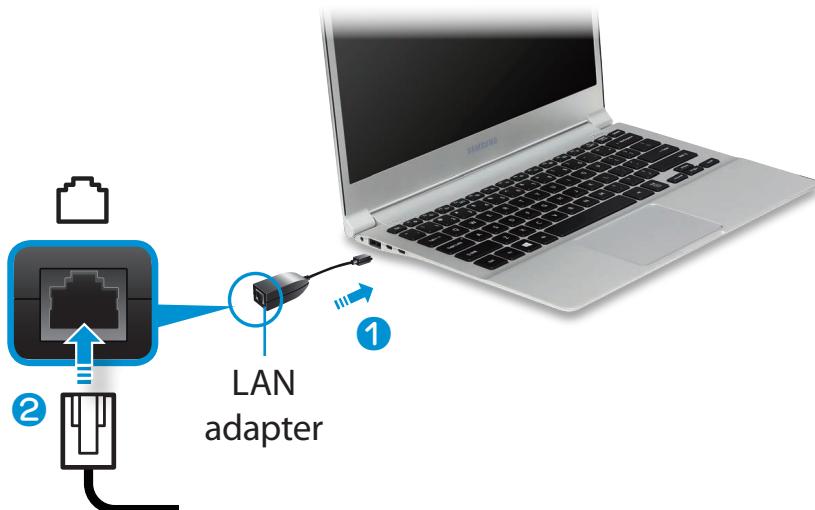
A wired network is a network environment used for a company network or broadband internet connection at home.



- You can use wired LAN by using the LAN adapter (Optional).
- The figures used for the description are of a representative model. Therefore the figures may differ from the real ones.

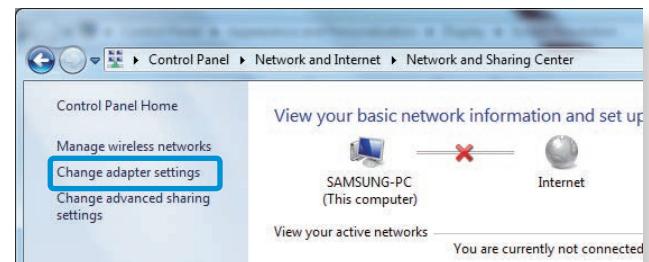
Connecting to a Wired LAN through Windows

- 1 Connect a LAN adapter to the wired LAN port of the computer.

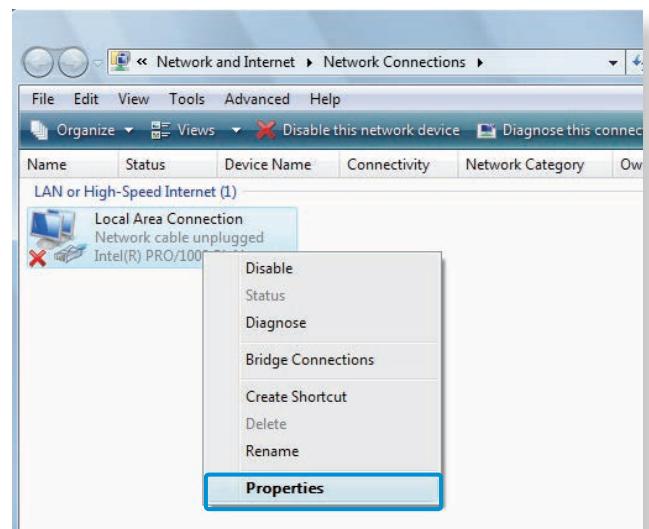


- 2 Connect the LAN cable to the LAN adapter.

- 3 Click **Start > Control Panel > Network and Internet > Network and Sharing Center** and click on **Change adapter settings** in the left menu pane.



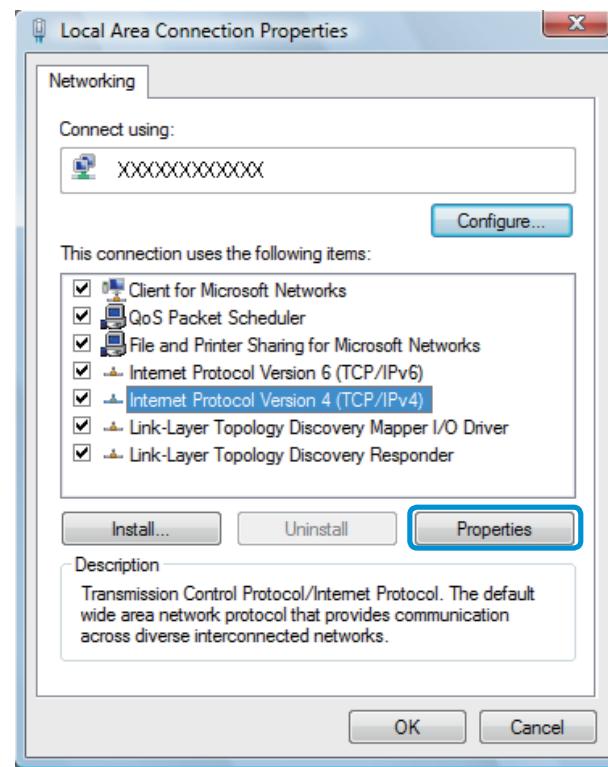
- 4 Select **Local Area Connection** and click the right button of the touch pad and select **Properties**.



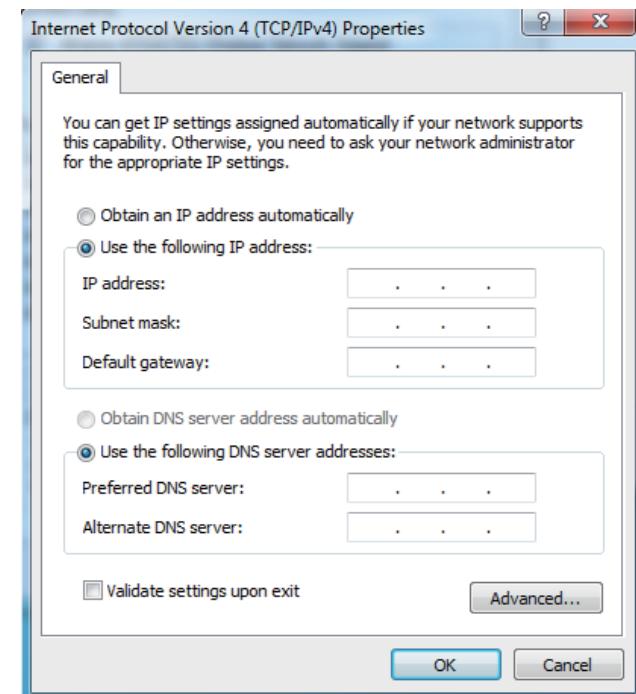
The LAN Device name may differ depending on your computer's Network Device.

Wired Network

5 Select **Internet Protocol Version 4(TCP/IPv4)** from the list of Network Components and click **Properties**.



6 Configure the IP settings.
When using DHCP, select **Obtain an IP address automatically**. To use a static IP address, select **Use the following IP address**, and set the IP address manually.



- The Network Component name may differ depending on the Operating System Installed.
- To add a network component, click **Install** in the screen shown in the figure above. You can add clients, services, and protocols.

 When not using DHCP, ask your network administrator for the IP address.

7 When you have completed the settings, click the **OK** button. The network settings have been completed.

Wired Network

Using the <Wake On LAN> Function

<Wake On LAN> is a function that activates the system from Sleep mode when a signal (such as a ping or magic packet command) arrives over the network (wired LAN).

1 Click **Start > Control Panel > Network and Internet > Network and Sharing Center** and click on **Change adapter settings** in the left menu pane.

2 Right-click on the Local Area Connection and select **Properties**.

3 Click **Configure > Power Management** tab. Select **Allow this device to bring the computer out of standby**, then click **OK**. Restart the system.

- If the system wake up from Sleep mode even though there is no received signal, use the system after disabling the <Wake On LAN> function.
- The LAN LED may not be turned off if System is shutdown without disabling the WOL <Wake on LAN> option.
- Connecting a wired LAN while using a wireless LAN may not activate the <Wake On LAN> function. Set the Wireless LAN to **Disable** to use the <Wake On LAN> function.
- <Wake On LAN> feature may not work while using Hybrid power saving feature.
The Hybrid power saving feature can be deactivated in **Control Panel > Power Options**.



For Windows 7, Wake On LAN is not supported Ping.



When connected to a 100Mbps/1Gbps wired LAN and the computer exits Sleep/hibernation mode, a message appears informing you of a connection to a 10Mbps/100Mbps wired LAN. This happens because when the computer exits standby/hibernate mode, restoring the network takes about 3 seconds. When the network is restored, it operates at 100Mbps/1Gbps.



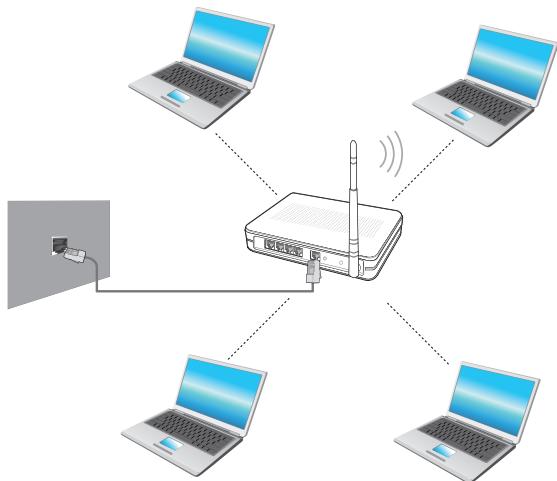
When system is running on battery, some time it takes about 20sec after inserting LAN cable to be able to connect to internet. This symptom happen as a result of power saving feature to reduce battery consumption.



When system is running on battery, the Wired LAN speed is decreased automatically to reduce battery consumption. In such case, a 1Gbps /100Mbps LAN would function at 100Mbps/10Mbps speed.

Wireless Network (Optional)

A wireless network (Wireless LAN) environment is a network environment that enables communicating between multiple computers at home or a small-size office through wireless LAN devices.



- The screen figures and terms may differ depending on the model.
- Depending on the program version, some functions may not be provided or different functions may be provided.
- The descriptions below are for computer models with a Wireless LAN card or device. A Wireless LAN device is optional.
The pictures in this manual may differ from the actual product depending on your wireless LAN device model.
- If the wireless LAN is turned off, press the **Fn** + **F12** key combination to turn it **on**.



What is an Access Point (AP)?

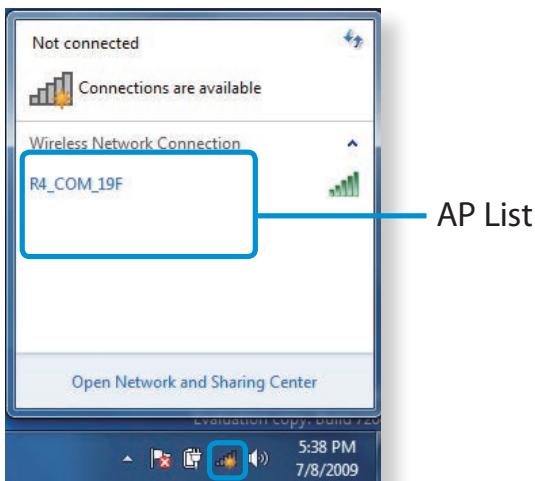
An AP is a network device that bridges wired and wireless LANs, and corresponds to a wireless hub in a wired network. You can connect multiple wireless LAN installed computers to an AP.

Wireless Network (Optional)

Connecting to a Wireless LAN through Windows

If there is an AP, you can connect to the Internet via the AP using the Wireless LAN connection method provided by Windows.

- 1 If you click the **Network Connections** icon in the system tray, a list of available APs appears. If you select an AP to connect to, the **Connect** button appears.



- 2 Click **Connect**.

If a network key is set for the AP, enter the network key and then click **Connect**.

 For the network key, please ask your network administrator.



- 3 When **Connected** to the AP is displayed, click the **Close** button.

You can access the network.

Normal Wireless LAN Status

If the wireless LAN icon is displayed in the system tray of the Taskbar, it indicates that the computer is connected to the Internet properly (see below).



Abnormal Wireless LAN Status

When the wireless LAN is not connected

If the wireless LAN icon is displayed with an "X" in the system tray of the Taskbar, it indicates that the wireless LAN device is turned off or that there are no available APs. Or the wireless LAN is disconnected.



If the wireless LAN is turned off, press the **Fn** + **F12** key combination to turn it on.

When you are not connected to the Internet

This is indicated by the wireless LAN icon  in the system tray of the Taskbar. In this case, you have to check the IP address settings. Please contact your network administrator and reconfigure the IP address.



When APs are found but your computer is not connected to the Internet

This is the case when an AP with a weak signal has been set to a high priority. Connect to an AP with a strong signal by clicking it.



- The currently connected AP.
- The signal strength is low.
- An AP with a strong signal strength

Using the TPM Security Solution (Optional)

Protect the user's personal information by saving user authentication data on a Trusted Platform Module (TPM) chip installed in the computer.



- Images and features may differ depending on the model version.
- Refer to the security solution help for more information.
- This function is only supported for models with TPM (security chip).

Configuring the security solution

To use the TPM security solution, initialize the TPM chip in the BIOS Setup, initialize the TPM solution, and then register a user. To use the TPM function, complete the following steps.

Step 1: Initializing the TPM chip

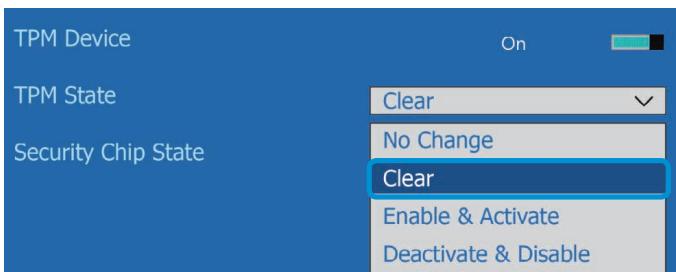
When using the TPM solution for the first time or registering a user again, initialize the TPM chip.



- Initializing the TPM chip deletes all authentication data on the chip.
- If the TPM chip is initialized after the security solution is configured, decrypting any existing folders or files that have been encrypted by the security solution may not be possible. Failure to do so may lead to inaccessibility to the folder and files after initialization.

Using the TPM Security Solution (Optional)

- 1 Turn on the computer.
- 2 Before the Samsung logo (Samsung ATIV) appears, press the **F2** key several times.
- 3 Access the **Security** menu.
- 4 Select **TPM Configuration**.
- 5 Set **TPM Device** to **Enabled** or **On**.
- 6 Set **TPM State** to **Clear**.
- 7 Select **Save**.
The computer restarts.
- 8 Before the Samsung logo (Samsung ATIV) appears, press the **F2** key several times.
- 9 On the BIOS setup screen, access the **Security** menu.
- 10 Select **TPM Configuration**.
- 11 Set **TPM State** to **Enable & Activate**.
- 12 Select **Save**.
The computer restarts.



Using the TPM Security Solution (Optional)

Step 2: Installing the TPM solution

Install the TPM solution according to the procedures below.



- Descriptions are based on the **SW Update**.
- This solution is provided only for models with Samsung Recovery Solution or the **SW Update** application.

1 Run **SW Update**.

2 Select **All Software**.

3 Select **TPM Host SW > Install**.



If the system software media is supplied with the product, install the application by using the system software media. (only when supplied)

4 Follow the on-screen instructions to complete the registration, and restart the computer.

Step 3: Registering a user

Register a user according to the procedures below.

1

Right-click on the taskbar.

2

Run the **Security Platform Management** item with the admin authority, click the **User Settings** tab, and initialize the settings.

The security authentication settings begin with the **Initialization Wizard**.

Using the TPM Security Solution (Optional)

3 When the initialization wizard window appears, click **Next**.



4 Select a **Security Platform Feature** to use and set a **basic user password**.

5 Follow the on-screen instructions to complete the user's registration.

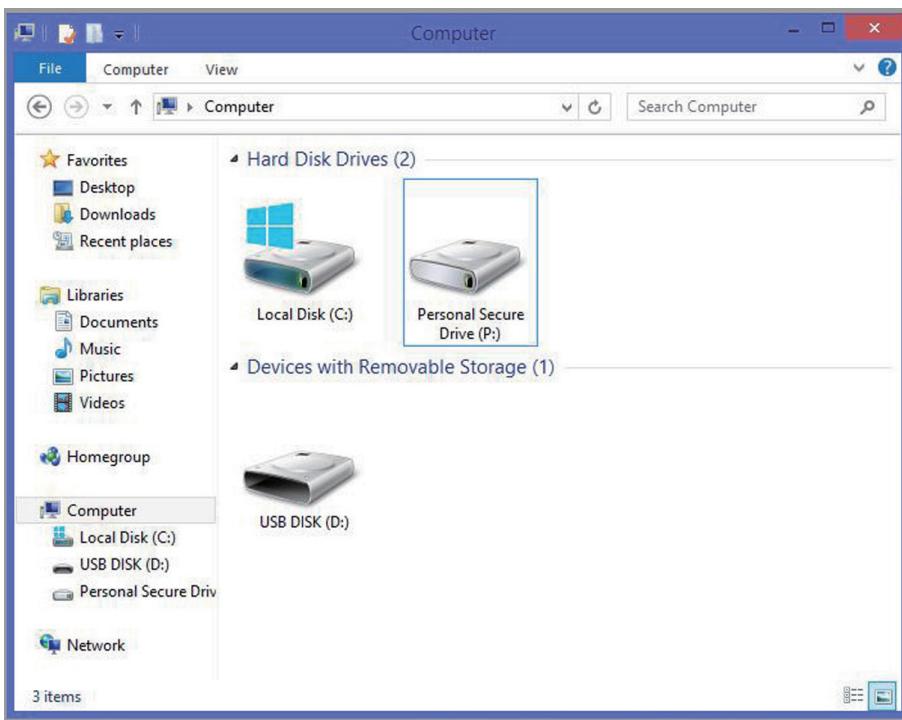
When a user is registered with the TPM, they are able to encrypt files and folders by using the encryption system. Registered users can also use files and folders that are about to be encrypted by creating or copying them to the virtual drive.



- As recommended by the initialization wizard, backup your emergency recovery file to an external storage device to use the TPM more safely.
- If the **status not initialized** message appears, select **Yes**.

Using the TPM Security Solution (Optional)

The virtual drive is in the following location.



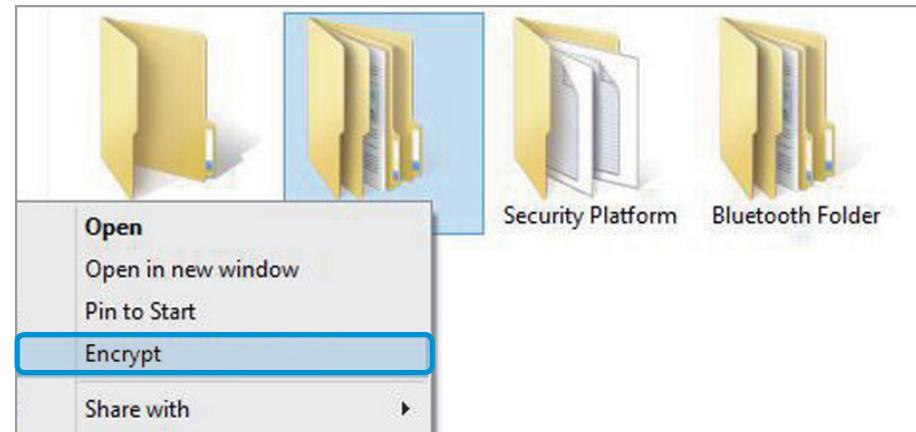
Encrypting folders and files

Encrypt folders and files with the Encrypting File System (EFS). EFS is available for the following operating systems:



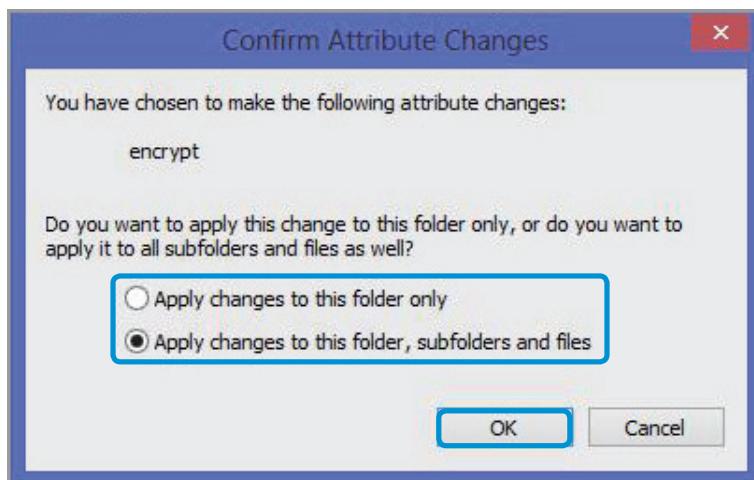
- Windows 7 Professional / Enterprise / Ultimate
- Windows 8 Pro / Enterprise
- Windows 8.1 Pro / Enterprise

1 Right-click a folder or file and then select **Encrypt**.



Using the TPM Security Solution (Optional)

2 Select the files or folders to encrypt and select **OK**.
The dialog box shown below appears only when the folder is encrypted.

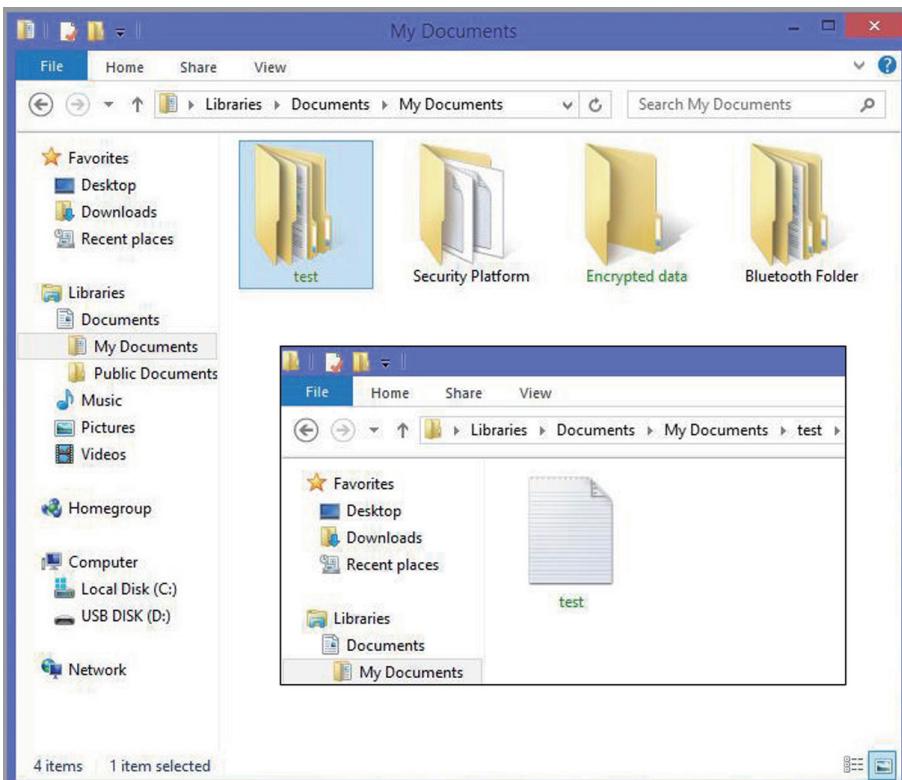


3 When the user authentication window appears, enter the **Basic User Password** you entered when the user was registered and select **OK**.



Using the TPM Security Solution (Optional)

4 The color of the encrypted folder or name of the encrypted file changes to green.



Decrypting folders and files

Right-click an encrypted folder or file and then select **Decrypt**.

Using the virtual drive (Personal Secure Drive)

The virtual drive is a space to save and manage confidential data. In the created virtual drive (PSD), it is possible to create files and folders as with a normal drive and to use confidential data saved on another drive by copying the data to the virtual drive (PSD).

If the virtual drive (PSD) does not appear

You can only use the virtual drive (PSD) if the Personal Secure Drive (PSD) option was selected during the TPM's registration. If the PSD option was not selected during registration, complete the following steps.

- 1 Right-click  on the taskbar.
- 2 Run the **Security Platform Management** item with the admin authority and select **Security Platform Configuration**.
- 3 When the initialization wizard window appears, click **Next** to select **Personal Secure Drive (PSD)** and then enter the user password.
- 4 Follow the on-screen instructions to complete the settings.

Using the TPM Security Solution (Optional)

If the virtual drive (PSD) is not loaded

To use the virtual drive (PSD), the virtual drive (PSD) should be loaded first. To load a PSD, follow the procedures below.

- 1 On the taskbar, right-click **Security Platform** ().
- 2 Select **Personal Secure Drive > Load**.
- 3 In the load window, enter the basic user password and click **OK**.
- 4 On the taskbar, open File Explorer () to confirm that the Personal Secure Drive has been created.

 If confidential data has been copied to the PSD, the original data files are not encrypted.

Registering a new user to the securitysolution

To register an existing user, delete the existing authentication information saved on the TPM chip, and then clear the TPM chip.

Register the user in the following order.

Step 1: Deleting a virtual drive

If a virtual drive has been created, delete the virtual drive before deleting the existing authentication information saved on the TPM chip.

- 1 On the taskbar, select  and right-click .
- 2 Select **Personal Secure Drive > Create/Manage**.
- 3 Select **Next**.

Using the TPM Security Solution (Optional)

4 Enter the password that you entered when registering with the TPM and select **Next**.

5 Select **Delete selected PSD > Next**.

6 Select **I want to permanently delete my Personal Secure Drive without saving an unencrypted copy of its contents > Next**.

7 Select **Next > Finish**.

The virtual drive is deleted.

Step 2: Deleting authentication information

To delete the existing authentication information, uninstall the TPM security solution and delete the solution data.

1 Select **Start > Control Panel > Programs > Uninstall a program**.

2 Select **Infineon TPM Professional Package > Uninstall**.

3 When a message window appears, select **Yes** to remove the program.

4 If the **Infineon Security Platform** message appears, select **No**.

5 On the taskbar, select File Explorer ().

Using the TPM Security Solution (Optional)

- 6 Select **View > Options > View > Hidden files and folders.**
- 7 Select the **Show hidden files, folders, and drives** option and select OK.
- 8 On the taskbar, select File Explorer (📁).
- 9 Select **Local disk (C:) > ProgramData** and delete **Infineon** folder.

The TPM security solution is deleted.

Step 3: Configuring the security solution (TPM)

To use the TPM security solution, see Configuring the security solution.



Chapter 3.

Settings and Upgrade

| | |
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LCD Brightness Control

You can adjust the LCD brightness in 8 levels.

 The screen brightness is automatically set to the brightest level when AC power is connected and the brightness is automatically set dimmer when the computer runs on battery power to extend the battery use time.

Controlling the Brightness Using the Keyboard

Adjust the LCD brightness by pressing the  +  key or the  +  key.

The LCD brightness can change up to 8 levels and the brightness increases by 1 level when pressing the  +  key once.

 • **Maintaining the changed LCD brightness even after turning the computer on again**

To maintain the LCD brightness set by using the brightness control keys or through the Power Options, follow the procedures below.

1. Click **Control Panel > Hardware and Sound > Power Options**.
2. Click **Change the settings** of the currently configured mode.



3. Adjust the display brightness adjustment menu bar and click the **Save the changes** button.

- **Saving battery power consumption**

Decreases the LCD brightness when the computer is running on battery power to save battery power consumption.

- **LCD bad pixels principle of computer**

Samsung observes the specifications regarding strict quality and reliability of LCD. But in spite of that, it is inevitable that there might be a small number of bad pixels. A large number of bad pixels can cause problems in appearance, but a small number of pixels doesn't affect the computer performance.

Therefore Samsung observes and manages the following dot principles:

- Bright dot : 2 or less
- Black dot : 4 or less
- Combination of Bright and Dark : 4 or less



Instructions for Cleaning the LCD

Clean the LCD panel with a soft cloth lightly moistened with computer cleansing detergent moving in one direction.

Cleaning the LCD panel with excessive force can damage the LCD.

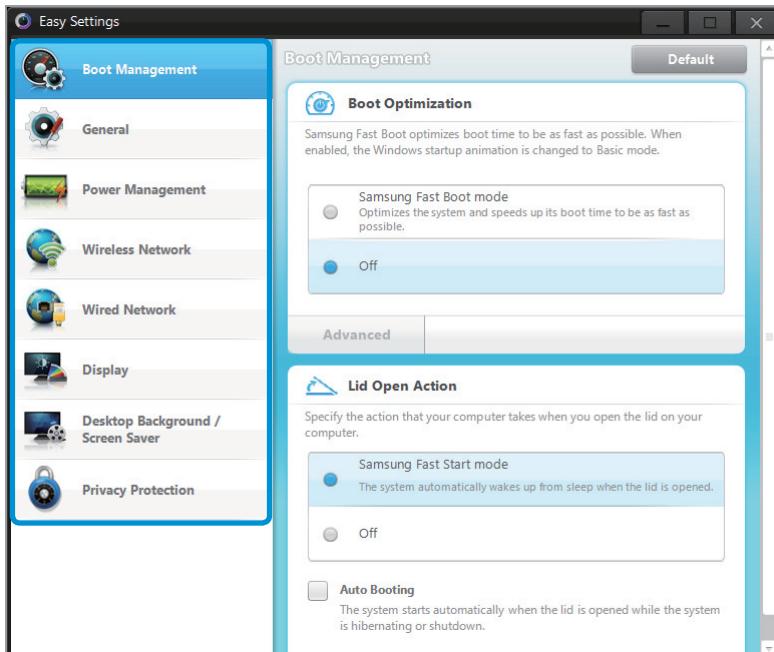
Easy Settings (Optional)

The **Easy Settings** is the integrated Samsung software control program that allows users to configure various settings.



- This description is for models that support this function running on Windows 7.
- The screen image and terminology may change depending on the model.
- Depending on the program version, some functions may not be provided or different functions may be provided.

- Press the **Fn** + **F1** key combination to launch the **Easy Settings**.
- Select an item to configure the corresponding function.



Functions

| | |
|--|--|
| Boot Management (Optional) | You can configure Boot Optimization, Power Button settings, Lid Open Action. |
| General | You can configure USB Charging, Battery Life Extender +, Silent Mode, Keyboard backlit, User Account Control, Intel Rapid Start Technology. |
| Power Management | You can configure Power Plan (high-performance, power-saving, Samsung optimal mode), Eco Mode, the power-saving settings and the display settings. |
| Wireless Network | You can configure whether to use the Bluetooth and Wi-Fi options. |
| Wired Network | You can select automatic or fixed IP settings. |
| Display | You can configure external display devices, and the screen brightness/color. |
| Desktop Background / Screen Saver | You can configure the Desktop background and the screen saver. |
| Privacy Protection | Set security functions and settings. |

BIOS Setup

The BIOS Setup enables you to configure your computer hardware according to your needs.



- Use the BIOS setup to define a boot password, change the booting priority, or add a new device.
- Since incorrect settings may cause your system to malfunction or crash, take care when configuring the BIOS.
- The functions of the BIOS setup are subject to change for product function enhancement purposes.
- The BIOS Setup menus and items may differ depending on your computer model.

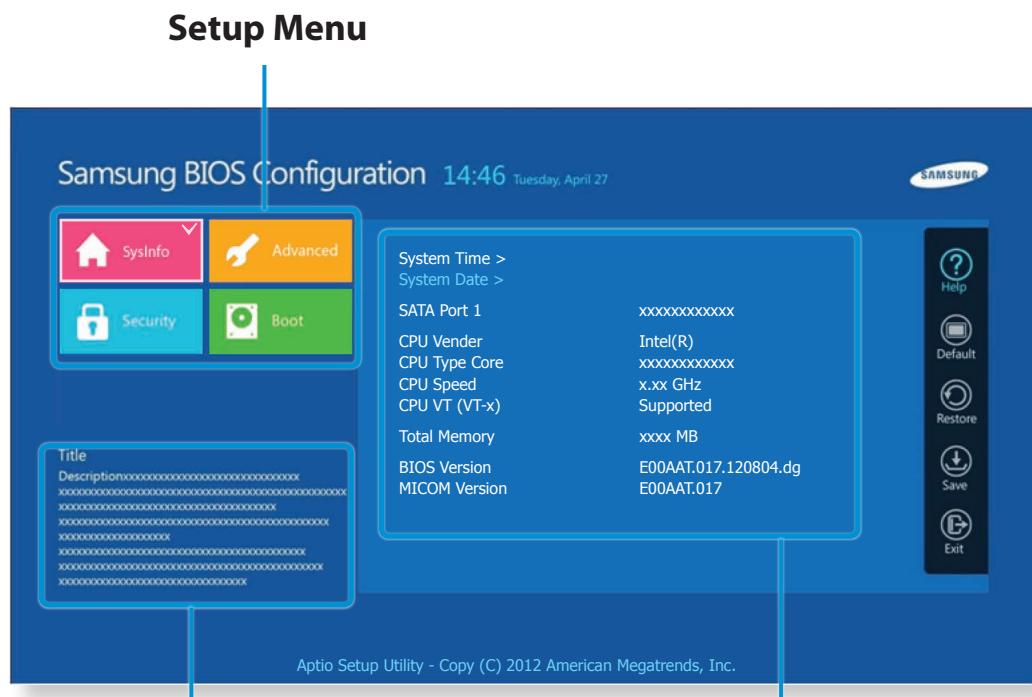
Entering the BIOS Setup

- 1 Turn the computer on.
Immediately press the **F2** key several times.
- 2 After a moment, the BIOS setup screen appears.
The items in the BIOS setup may differ depending on the product.

BIOS Setup

The BIOS Setup Screen

 The BIOS Setup menus and items may differ depending on your computer model.



Help

Help for the selected item appears automatically.

Setup Items

| Setup Menu | Description |
|-----------------|--|
| SysInfo | This is a description about the basic specifications of the computer. |
| Advanced | Using this menu, you can configure the major chipsets and additional functions. |
| Security | Used to configure security functions, including passwords. |
| Boot | This menu enables you to configure peripherals and booting related settings such as the boot priority. |

Setting a Boot Password

If you set a password, you have to enter the password when you turn the computer on or enter the BIOS Setup.

By configuring a password, you can restrict system access to authorized users only and protect data and files saved on the computer.



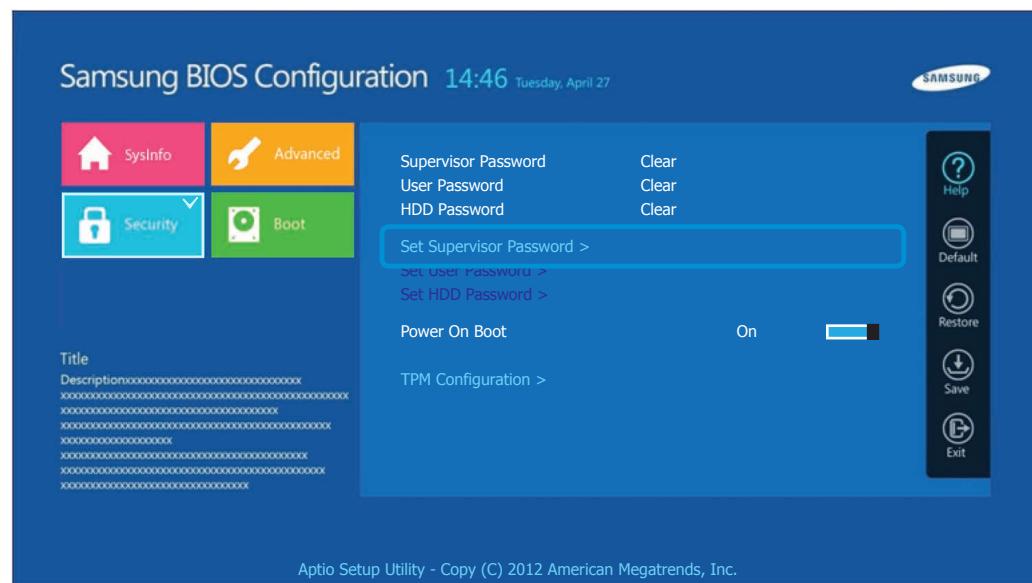
- The password setting provides the following 3 sub menus. (Supervisor Password, User Password and HDD Password)
- Do not lose or forget your password.
- Do not let others know your password.
- If you forget the Supervisor Password or HDD Password, you will need to request assistance from the service center. In this case, a service fee will be charged.
- When you forget the User Password, you can disable the Supervisor Password, and the User Password is also automatically disabled.
- The screen images and terms may differ from actual product depending on the computer model and driver version.

Setting a Supervisor Password

If you set a Supervisor Password, you need to enter the password when you turn the computer on or enter the BIOS Setup.

Setting only the Supervisor Password and User Password is not very secure. You can use an HDD Password as well to increase the security level.

- Select the **Security** menu in the BIOS Setup.
- Select the **Set Supervisor Password**.



Setting a Boot Password

3 Enter a password, press <Enter>, re-enter the password for confirmation, and press <Enter> again.

The password can be up to 20 alphanumeric characters.
Special characters are not allowed.

4 The supervisor password has been set.

The supervisor password is required to turn the computer on or to enter the BIOS Setup.



For some models, if the password entered message appears in the **Setup Notice** window, the settings are not complete until the <Enter> key is pressed.

Setting a User Password

This helps prevent unauthorized access to the major settings in the BIOS Setup menu.

Before configuring a user password, a **supervisor password** must have been configured. Deactivating the supervisor password also deactivates the user password.

In the **Set User Password** select and complete the procedures from Step 3 of Setting a Supervisor Password.

Setting Up a Boot Password

To setup a boot password, the administrator password (**Set Supervisor Password**) should be set in advance.

Set the **Password on boot** item to **Enabled**.

Once a boot password is set, you have to enter a password to boot up the computer.

Be sure to remember the password for later use.

Setting a Boot Password

Setting up a Hard Disk Drive Password (Optional)

If you set a password for a hard disk drive, it cannot be accessed from another computer.

Select in the **Set HDD Password** item and define a password as described in Step 3 of the Setting up the Supervisor Password.



- The hard disk drive password setting function is not provided for some models.
- **Changing the hard disk drive password**

For security purposes, you can only change a hard disk drive password after restarting the computer by pressing the computer **Power** button.

If you cannot change the hard disk drive password or the **HDD Password Frozen** message appears when entering the BIOS Setup and then selecting **Security > HDD Password**, press the **Power** button to turn the computer on again.

Deactivating the Password

- 1 Select on the password to be deactivated. To unlock the admin password, for instance, press **Set Supervisor Password**.
- 2 In the **Enter Current Password** item, enter the currently configured password and press **<Enter>**.
- 3 Leave the **Enter New Password** item field empty, and press **<Enter>**.
- 4 Leave the **Confirm New Password** field empty, and press **<Enter>**.

The password is deactivated.



For some models the password is only canceled if the **<Enter>** key is pressed in the **Setup Notice** window.

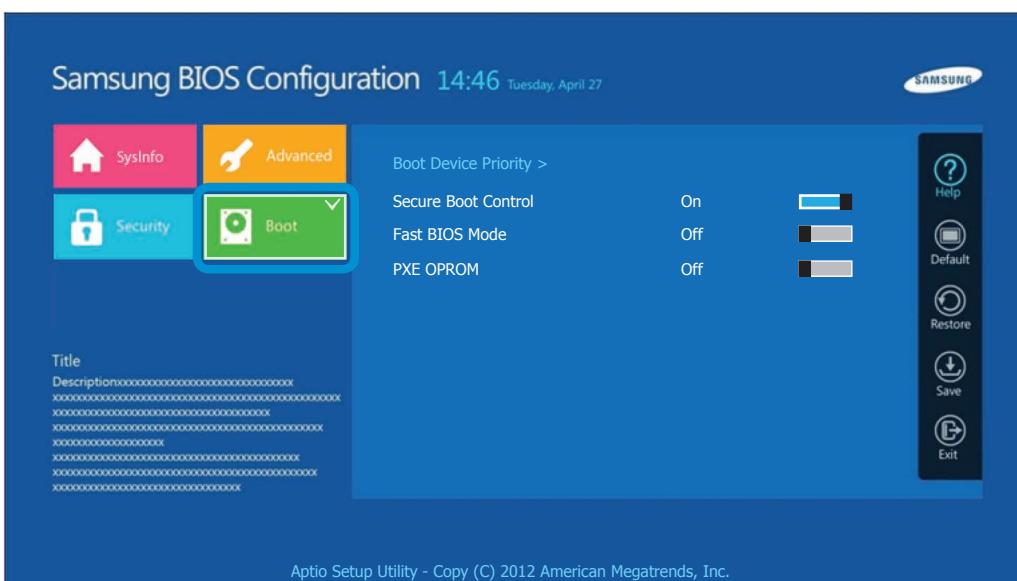
Changing the Boot Priority

The computer is configured so that it boots from the HDD with priority, by default.

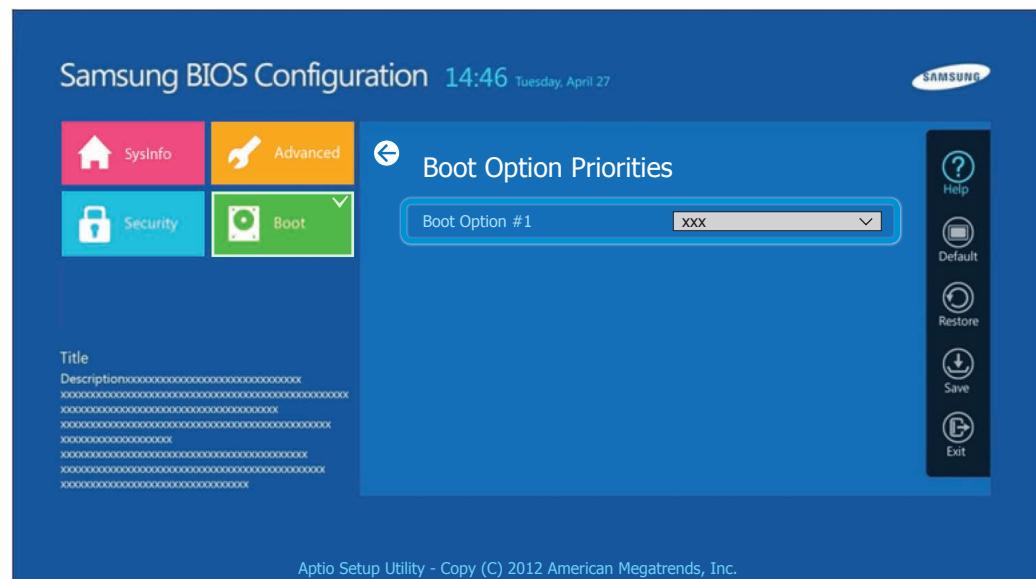
This section will show you how to change the setting so that the computer boots from a USB device.

 The screen image and terms may change depending on the model and the device driver version.

- 1 Connect a bootable USB device.
- 2 Immediately after the computer restarts, press **F2** several times.
- 3 Enter the BIOS Setup. Select the **Boot** menu in the BIOS Setup.



- 4 Set the **Boot Device Priority > Boot Option #1** item on the right screen to USB device.



- 5 Select **Save** and then **Yes**.
- 6 The computer will restart.

Now, the boot priority has been changed so that the device will boot from the USB device with priority.

Battery

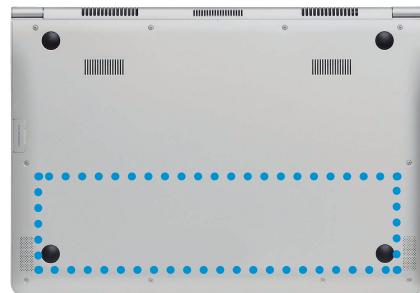
Please refer to the following instructions when running the computer on battery power without connecting the AC power.

This computer is equipped with an internal battery.

- !**
 - **Users cannot remove or replace the internal battery.**
 - **To remove or replace the battery, use an authorized service center in order to protect the product and users. You will be charged for this service.**
 - Use only chargers specified in the User Manual.
 - Never heat the battery pack, put it near or in a fire or use at a temperature higher than 60°C, as this may cause fire.
 - Please refer to the system operation environment of this manual and operate and store the battery at room temperature.

-  Before using the computer for the first time, make sure to connect the AC adapter and charge the battery completely.
- The images used for the illustration are of a representative model, therefore the images may differ from the actual product.

The location of the internal battery



Charging the Battery

- 1** An internal battery is embedded. Connect the AC adapter to the power input jack of the computer. The battery will start charging.
- 2** When charging is complete, the Charge operating indicator turns green.

| Status | Charge operating indicator |
|--------------------------|---|
| Charging |  Red |
| Charging complete |  Green |
| AC adapter not connected |  Off |

Battery

Measuring the Remaining Battery Charge

You can view the battery charge status by completing the following procedures.

Confirming the battery charge in the Taskbar

Disconnect the AC adapter and move the mouse cursor over the battery icon in the system tray of the Taskbar to confirm the remaining battery charge.



Extending the Battery Usage Time

Decreasing the LCD Brightness

Press the **Fn** + **F2** keys on the keyboard to decrease the LCD brightness to extend the battery usage time.

Battery Usage Time Information

A battery is an expendable supply, so when using it over a long time, the capacity/battery life is shortened. If the battery life is reduced to under half of its initial time, we recommend purchasing a new battery.

When not using the battery for a long time, store the battery after charging it to 30-40% of its capacity. This extends the battery life time.

Battery

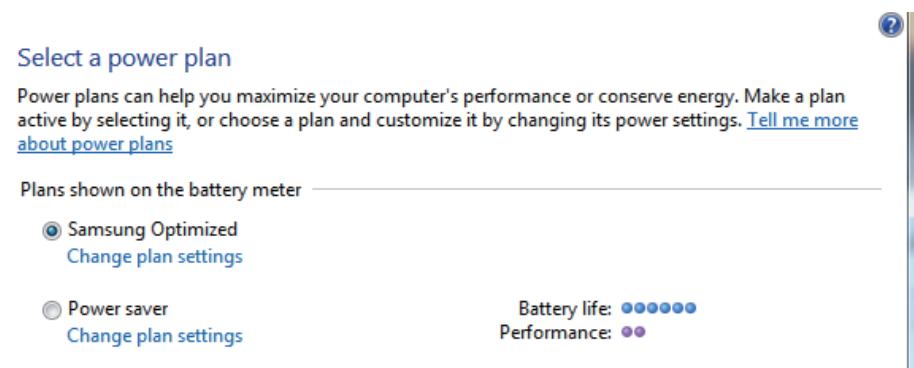
Using the power management program

This program helps you use the battery more efficiently and supports the power mode optimized for the operating environment.

- 1 Click **Start > Control Panel > Hardware and Sound > Power Options**.

Alternatively, right-click the power measuring device icon  in the notification area of the taskbar and select **Power Options**.

- 2 If the following screen appears, select one of the modes.



Using the Battery Calibration Function

When charging/discharging the battery repeatedly for a short time only, the battery usage time may be reduced by the difference between the actual battery charge and the remaining charge display.

In this case, the actual battery charge and the remaining charge display will be the same by discharging the battery completely using the Battery Calibration function, and then recharging it again.

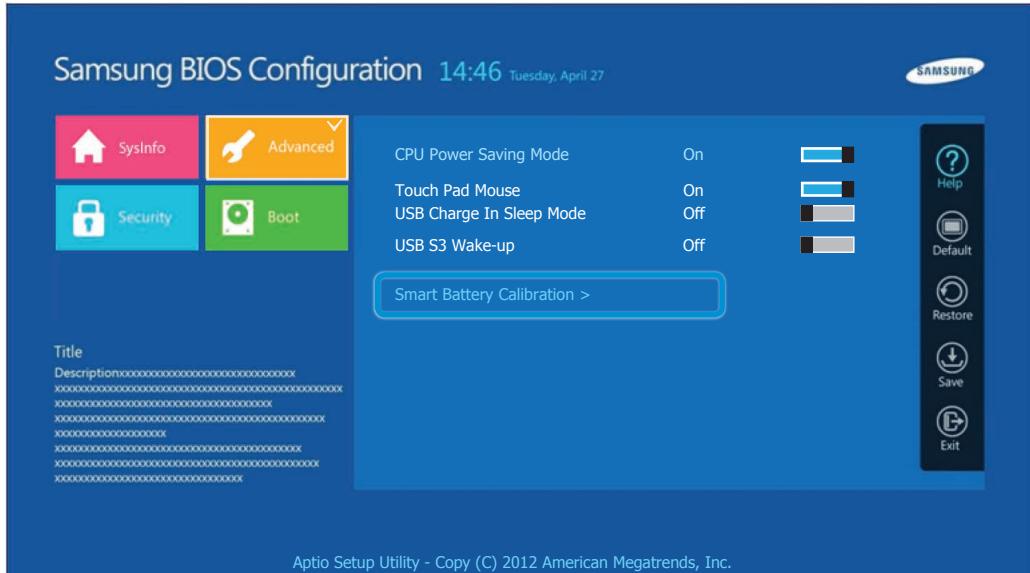


The screen images and terms may differ from actual product depending on the computer model and driver version.

- 1 Disconnect the AC power adapter after turning off the computer.
- 2 Turn the computer back on, and press the **F2** key to enter the Setup screen.

Battery

3 Select Advanced > Smart Battery Calibration.



4 The Battery Calibration function is activated and the battery is forcefully discharged. To stop the operation, press the <Esc> button.

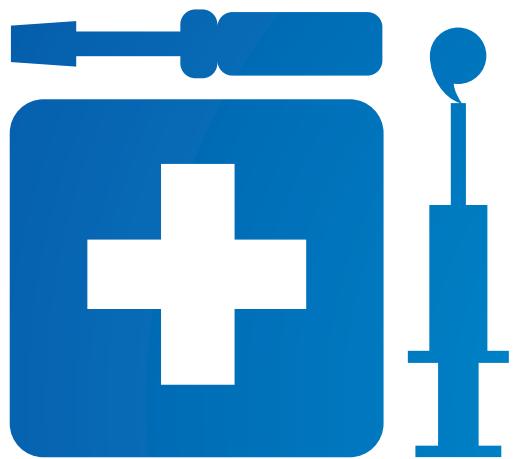
This operation requires 3~5 hours depending on the battery capacity and the remaining battery charge.

Chapter 4.

Backup / Restore

Samsung Recovery Solution (Optional)

78



Samsung Recovery Solution is a program that enables restoring or backing up the hard disk drive for when a problem occurs with the computer.

If the computer fails to boot up, you can restore the computer by pressing the  key in the booting screen.



- Samsung Recovery Solution may not be provided or the version may differ depending on the model. In addition, some functions may not be provided or may differ depending on the version.

For more information on using Samsung Recovery Solution, please refer to the online help of the program.

- The screen images in this document may differ from actual product.
- If your computer does not have an internal ODD, you need an external ODD connected to your computer to use the Backup Function or Restore Function using DVDs.
- The System Software function may not be provided depending on the program version.

Samsung Recovery Solution Functions

Backup/Restore Functions

Backup Function

Backs up drive C or required folders and files.

- Complete Backup

Backs up drive C.

- Data Backup

Backs up important folders and files.

A problem occurs



Restore Function

Restores major Windows files, drive C, or folders and files to the previous state.

- Basic Restore

Restores only major Windows files in a short time.

- Complete Restore

Restores drive C to the previous, normal state.

- Data Restore

Restores important files or folders to the previously backed up state.

Samsung Recovery Solution (Optional)

System Software Functions

Samsung Recovery Solution provides system software so that you can reinstall or copy the device drivers and system software necessary for normal operations onto a separate storage device.

Restore Function

Not only can you use Samsung Recovery Solution when Windows is running, but also when you are unable to boot up into Windows. Let's learn how to use Samsung Recovery Solution.

Optional functions such as Initial State Image, Initial Status Backup, and Partitioning are only available in some models.

If the image of the initial state is saved on a DVD or removable storage device, connect the DVD drive or removable storage device to the computer before using the function.

Restoring the computer

Restore is a function that enables restoring the computer to a saved point when the computer was purchased or a user-saved point.

The Restore function provides the Basic Restore and Complete Restore options.

1

– When Windows is running:

Click **Samsung Recovery Solution**.

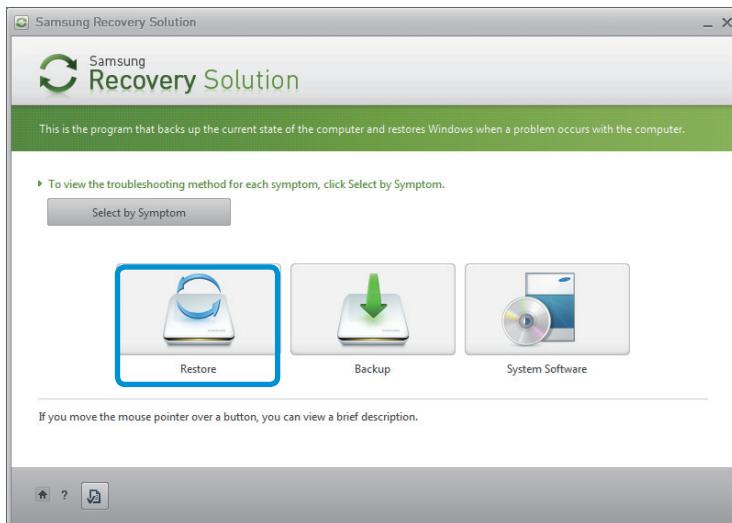
– When Windows does not start:

Turn the computer on and press the  key when the boot screen (SAMSUNG logo) appears. After a moment, the computer boots up in Restoration mode and the Samsung Recovery Solution screen appears.



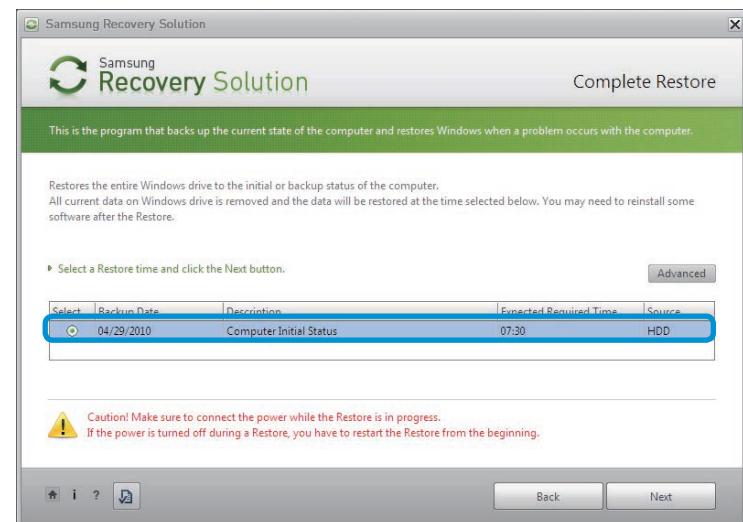
For computers supporting the touch screen function, the touch screen function does not work during Restore Mode. In this case, please use the touchpad or mouse.

2 If the initial menu screen appears, click **Restore**.



3 Select either **Basic Restore** or **Complete Restore** from the Restore menu.

To restore the computer to the initial state, click **Computer Initial State** and perform the restoration process according to the instructions that appear on the screen.



If you click **Select by Symptom**, the Select by Symptom menu appears. If you select a symptom, a recommended restoration option will blink. Click the restoration option to continue.



Run **Complete Restore** if the computer does not work even after **Basic Restore** has been completed.

! In the **Advanced** menu, you can change the size of the hard drive partitions (e.g. C: and D:).

- Make sure to backup your data in advance, as all data will be deleted after the partition size is changed.
- The **Advanced** menu is only activated when the computer boots up in the restoration area.
(by pressing the  key during the booting sequence.)

! Since a Complete Restore deletes all user data as well as additionally installed programs, please backup your important data first using the Data Backup function, before running Complete Restore.

4 The computer boots up into restoration mode and the restoration progress message appears. If you click **OK**, the restoration begins. The restoration may take some time, please wait for a moment.

5 When the 'Restart the System' message appears after the restoration is complete, click **OK** to restart the system.

! Make sure that the power cord is connected while the restoration is in process. The first time the computer boots up after a Complete Restore has been performed, the speed of the boot process may be slowed down due to the system optimization process. At this time, do not shut the computer down by force.

Complete Backup/Restore

A **Complete Backup** saves the complete image of the C drive onto another drive or DVD. A **Complete Restore** restores the image file saved by the Complete Backup onto the C drive.

Complete Backup



If you perform the Complete Backup function onto a DVD or removable storage device, you can restore your computer even when a problem occurs with the hard disk or when the restoration area is removed.

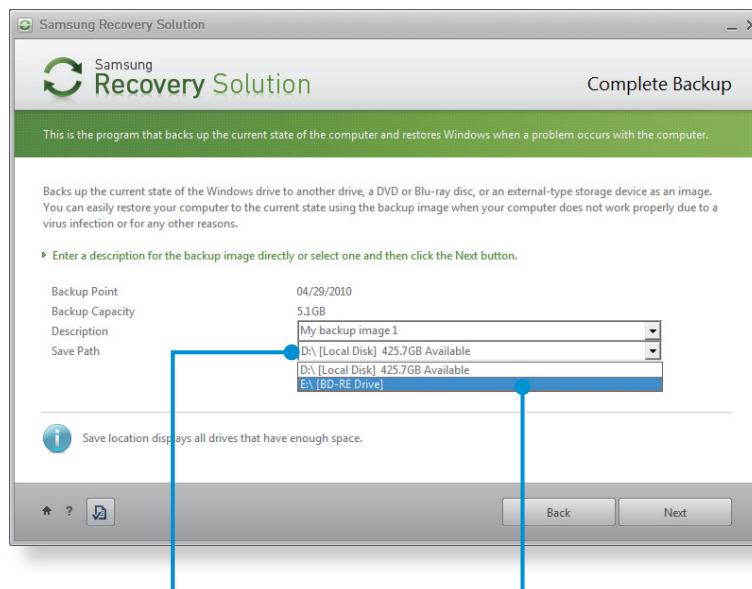
To create a backup, a removable storage device with at least 15 GB of free space is required.

1 Click **Backup** in the start screen of the Samsung Recovery Solution.

2 Enter a description of the current status of the computer and click **Next**.



After connecting a DVD drive or removable storage device, you can specify the DVD drive or removable storage device as the Save Path.



Select Drive D.

Select the DVD drive.

3 When the option selection item appears, select an option and click **Next**.

 The Livelmaging and System Software Backup functions are supported as options for the Complete Backup operation.

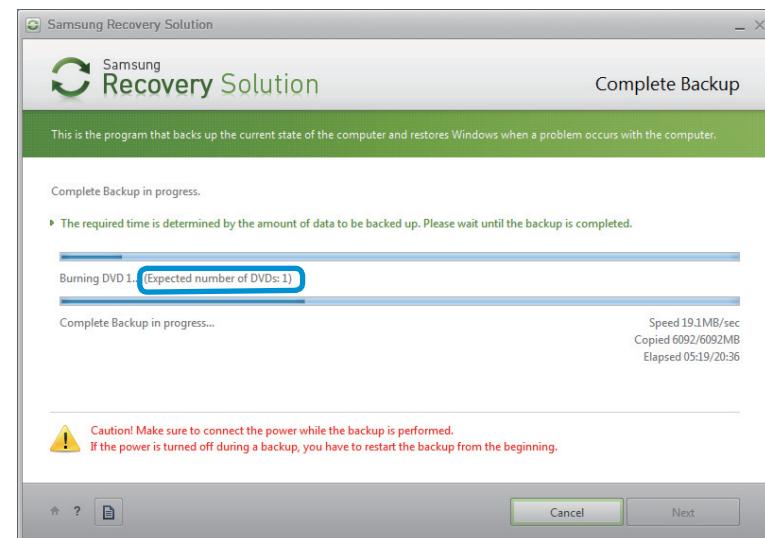
- Livelmaging:** Performs the Complete Backup operation while Windows is running. The backup operation using Livelmaging may slow down if the hard disk drive is accessed frequently by other applications.
- System Software Backup:** This function backs up the system software on to the DVD after the completion of the Complete Backup operation.

4 When the system restarts in Restoration Mode, the **Complete Backup** operation begins. Continue with the backup by following the instructions.



- Samsung Recovery Solution supports the DVD+R, DVD-R, DVD+RW and DVD-RW formats.
- If the Livelmaging option has been selected, the Complete Backup operation begins without the computer being restarted.

5 Continue with the Complete Backup operation by following the instructions.



Samsung Recovery Solution (Optional)

6 When the 'Restart the System' message appears after the backup is complete, click **OK** to restart the system.



If the Livemaging option has been selected, the computer is not restarted.

Complete Restore

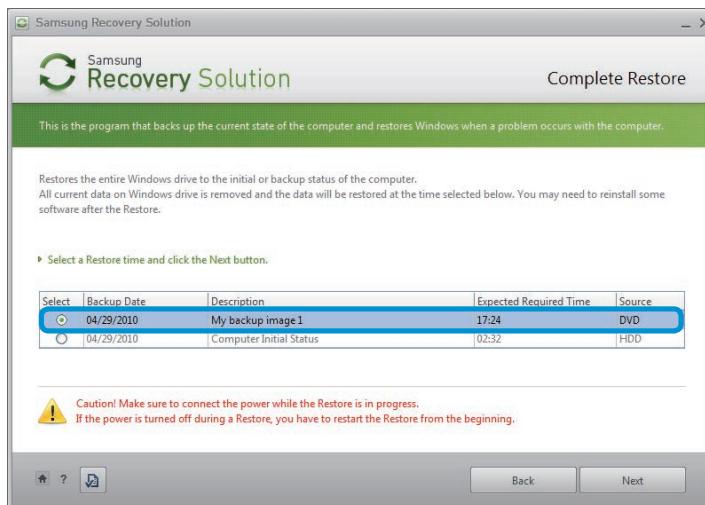
1 – **When backing up onto DVD**
Turn the computer on and insert the backup DVD into the DVD drive.
If there are multiple backup DVDs, insert the first DVD.

– **When backing up to a removable storage device**
Connect the removable storage device.

– **When backing up to another drive**
Proceed to Step 2.

2 When the Samsung Recovery Solution start screen appears, click **Restore** and then click **Complete Restore**.

3 Select a **Complete Backup** restoration point in the restoration point selection screen and click the **Next** button. The system is restarted.



4 The restoration progress message appears after the computer boots up in restoration mode. If you click **OK**, the restoration begins.

 If multiple DVDs have been used for a Complete Backup, whenever burning a DVD is completed, the "Insert the next DVD" message will appear.

5 When the 'Restart the System' message appears after the restoration is complete, click **OK** to restart the system. The Complete Restore has been completed.

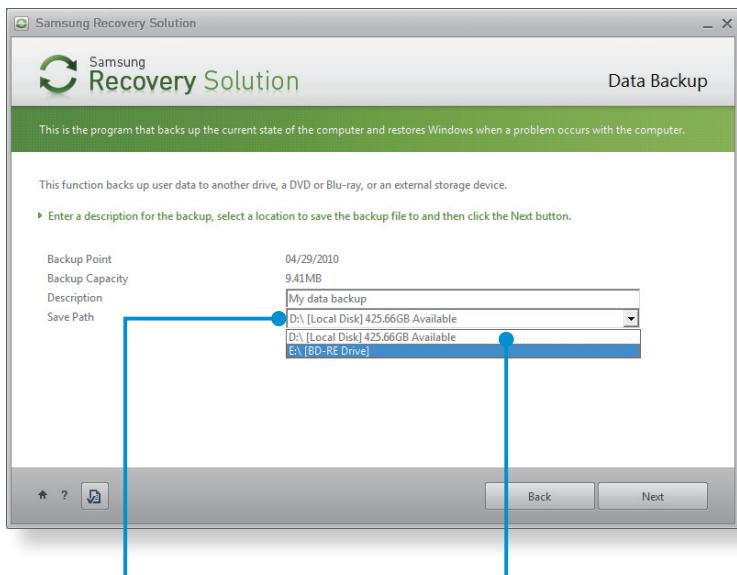
Data Backup/Restore

The **Data Backup** function enables you to backup specific files and folders to another drive, DVD or removable storage device. **Data Restore** enables you to restore data using the data saved by a Data Backup when data is lost. This guide describes the Backup and Restore procedures on the basis of backing up and restoring by using DVD.

Data Backup

- 1 When the Samsung Recovery Solution start screen appears, click **Backup** and then click **Data Backup**.
- 2 In the data selection screen, select either **Basic Selection** or **Select from all**, select a folder or file to be backed up, and then click the **Next** button.
- 3 Enter a description for the backup in the **Description** field so that you can easily recognize it later and specify the **Save Path**.

 If your computer has a DVD-Writer, you can specify the DVD drive as the Save Path.



Select Drive D.

Select the DVD drive.

! If you have specified a hard disk drive or a removable disk as the Save Path, the **SamsungRecovery\SamsungData** folder is created on the corresponding drive (e.g. D:\) and the data is saved to the folder. Take care to not delete the folder by mistake or on purpose.

4 If you click the Next button, the Data Backup begins. If you have selected the DVD drive as the Save Path, the "Insert a blank DVD" message appears. Insert a blank DVD and click the OK button.

5 The "Backup is completed" message appears.

Data Restore

1 – When backing up onto DVD

Turn the computer on and insert the backup DVD into the DVD drive.

– When backing up to a removable storage device

Connect the removable storage device.

– When backing up to another drive

Proceed to Step 2.

2 When the initial menu screen appears, click **Restore** and then click **Data Restore**.

3 Select a backup item to be restored in the backup list and click the **Next** button.

4 Select a folder for the restoration and click the **Next** button.
Data Restore begins.

5 When Data Restore is completed, check if the data has been restored to the specified folder.

Samsung Recovery Solution (Optional)

System Software Function

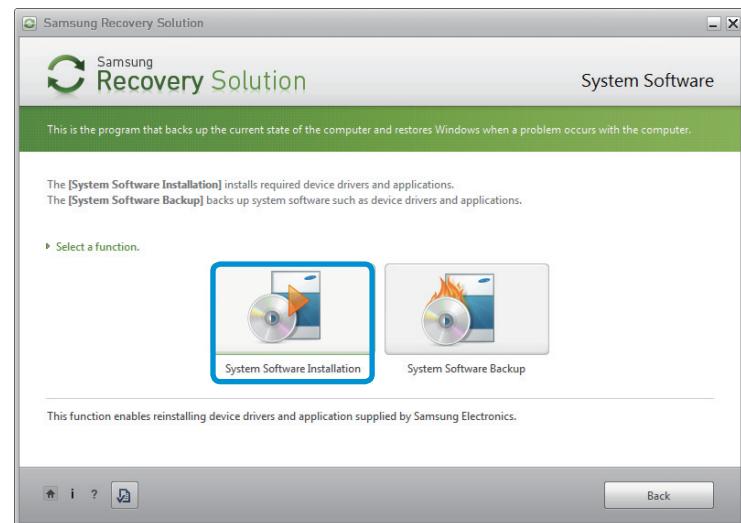
The System Software function is a function that enables you to reinstall device drivers and System Software Programs or back up those programs.

 The system software function is supported by **Samsung Recovery Solution version 4 or later**. Therefore, the function may not be supported depending on the version.

 The System Software Installation Function only works in Microsoft Windows.

Installing System Software

- When the initial menu screen appears, click **System Software > System Software Installation**.



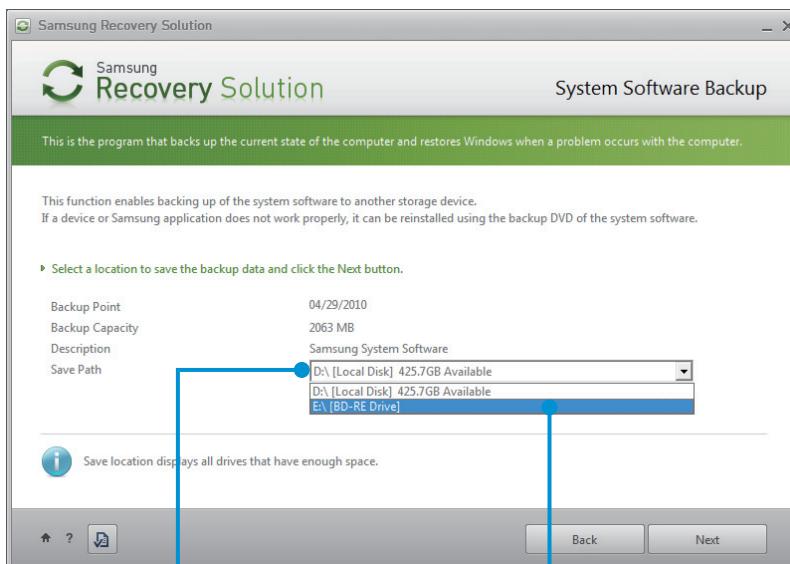
- Move to the **SW Update**.
Using the **SW Update**, you can install device drivers and applications.
- After the installation is complete, the computer will restart.

System Software Backup

1 When the initial menu screen appears, click **System Software > System Software Backup**.

2 Specify the Save Path.

 If your computer has a DVD-Writer, you can specify the DVD drive as the Save Path.



Select Drive D.

Select the DVD drive.

 If you have specified a hard disk drive or a removable disk as the Save Path, the **SamsungSoftware** folder is created on the corresponding drive (e.g. D:\) and the system software programs are saved to that folder. Take care to not delete the folder.

3 If you click the **Next** button, the Software Backup begins. If you have selected the DVD drive as the Save Path, the “Insert a blank DVD” message appears. Insert a blank DVD and click the **OK** button.

4 After the backup, the **System Software Backup is completed** message appears.

 • If you want to install the System Software Programs backed up on the drive, run the **SecSWMgrGuide.exe** file in the **SystemSoftware** folder.

- When installing System Software Programs from the backed-up DVD, insert the DVD and follow the System Software Installation directions.
- To delete Samsung Recovery Solution, refer to the Help section of the program.

Recovery Solution Representation (Optional)

What is a Recovery Area?

- Samsung computers have an additional partition to recover computers or save backup files.
(Only for models with the Samsung Recovery Solution.)
This partition is called a Recovery Area and it includes a recovery image that comprises of the OS and application programs.
- You can either double-click the Samsung Recovery Solution icon on the desktop or press  while booting the computer to enter the Recovery Area. Then you can back up the present computer state or recover the computer from backed up images.
- For deleting the Recovery Area, you need to use an additional Recovery Area Removal Tool. After deleting the recovery area, you can use the newly created partition for other uses, such as for saving personal data. Be careful that once the recovery area is deleted, the Samsung Recovery Solutions will not work anymore.

The capacity representation of the hard disk drive(HDD) in Windows is different from the product specifications.

- The capacity of the storage device (HDD) of the manufacturer is calculated assuming that 1KB=1,000 Bytes. However, the operating system (Windows) calculates the storage device capacity assuming that 1KB=1,024 Bytes, and therefore the capacity representation of the HDD in Windows is smaller than the actual capacity.
This is due to the difference in capacity calculation and does not mean the installed HDD is different from the product specifications.
- The capacity representation in Windows may be smaller than the actual capacity because some programs occupy a certain area of the HDD outside of Windows.
- For models with Samsung Recovery Solution, the HDD capacity representation in Windows may be smaller than the actual capacity because Samsung Recovery Solution uses a hidden area of about 5~20GB of the HDD to save the recovery image, and that hidden area is not counted towards the total size available to Windows.

The size of Samsung Recovery Solution varies by models because of the different size of applied programs.



Chapter 5. Appendix

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Important Safety Information

Safety Instructions

Your system is designed and tested to meet the latest standards for safety of information technology equipment. However, to ensure safe use of this product, it is important that the safety instructions marked on the product and in the documentation are followed.

 Always follow these instructions to help guard against personal injury and damage to your system.

Setting Up your System

- Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.
- Do not use this product near water or a heat source such as a radiator.
- Set up the system on a stable work surface.
- The product should be operated only with the type of power source indicated on the rating label.
- Ensure that the electrical outlet you are using to power your equipment is easily accessible in case of fire or short circuit.

- If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area.
- Openings in the computer case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space, at least 6 inches (15 cm), around the system for ventilation when you set up your work area. Never insert objects of any kind into the computer ventilation openings.
- Ensure that the fan vents on the bottom of the casing are clear at all times. Do not place the computer on a soft surface, doing so will block the bottom vents.
- If you use an extension cord with this system, make sure that the total power rating on the products plugged into the extension cord does not exceed the extension cord power rating.
- For Notebooks with glossy display bezels the user should consider the placement of the Notebook as the bezel may cause disturbing reflections from surrounding light and bright surfaces.

Important Safety Information

Care During Use

- Do not walk on the power cord or allow anything to rest on it.
- Do not spill anything on the system. The best way to avoid spills is to not eat or drink near your system.
- Some products have a replaceable CMOS battery on the system board. There is a danger of explosion if the CMOS battery is replaced incorrectly. Replace the battery with the same or equivalent type recommended by the manufacturer.

Dispose of batteries according to the manufacturers instructions. If the CMOS battery requires replacement insure that a qualified technician performs the task.

- When the computer is turned off, a small amount of electrical current still flows through the computer.

To avoid electrical shock, always unplug all power cables, remove the battery and modem cables from the wall outlets before cleaning the system.

- Unplug the system from the wall outlet and refer servicing to qualified personnel if:

- The power cord or plug is damaged.
- Liquid has been spilled into the system.
- The system does not operate properly when the operating instructions are followed.
- The system was dropped or the casing is damaged.
- The system performance changes.

The Instruction On Safety Operation of NotePC

1. When installing and operating devices please refer to safety requirements in the user manual.
2. Devices can be used only with the equipment specified in the technical specifications of the devices.
3. If any smell of burning or smoke is detected from the computer the unit should be switched off and battery removed. The unit should be checked by a qualified technician before reuse.
4. Service and repair of devices should be carried out by authorized service centers.
5. Do not allow your portable computer to operate with the base resting directly on exposed skin for extended periods of time. The surface temperature of the base will rise during normal operation (particularly when AC Power is present). Allowing sustained contact with exposed skin can cause discomfort or eventually a burn.

Replacement Parts and Accessories

Use only replacement parts and accessories recommended by manufacturer.

 To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.

 Do not use this product in areas classified as hazardous. Such areas include patient care areas of medical and dental facilities, oxygen rich environments, or industrial areas.

Battery Disposal

 Do not put rechargeable batteries or products powered by non-removable rechargeable batteries in the garbage.

Contact the Samsung Helpline for information on how to dispose of batteries that you cannot use or recharge any longer.

Follow all local regulations when disposing of old batteries.

 THERE IS A RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Laser Safety

All systems equipped with CD or DVD drives comply with the appropriate safety standards, including IEC 60825-1. The laser devices in these components are classified as "Class 1 Laser Products" under a US Department of Health and Human Services (DHHS) Radiation Performance Standard. Should the unit ever need servicing, contact an authorized service location.

 • **Laser Safety Note:**

Use of controls or adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. To prevent exposure to laser beams, do not try to open the enclosure of a CD or DVD drive.

- Class 1M laser radiation when operating part is open.
Do not view directly with optical instruments.
- Class 3B invisible laser radiation when open.
Avoid exposure to the beam.

Replacement Parts and Accessories

Connect and Disconnect the AC adapter

The socket-outlet shall be installed near the equipment and shall be easily accessible.

Do not unplug the power cord by pulling the cable only.

Power Cord Requirements

The power cord set (wall plug, cable and AC adapter plug) you received with your computer meets the requirements for use in the country where you purchased your equipment.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your authorized dealer, reseller, or service provider.

General Requirements

The requirements listed below are applicable to all countries:

- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
- The power cord set must have a minimum current capacity of 7 A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system. (USA ONLY)
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C7 (or C5) connector, for mating with appliance inlet on the computer.

Regulatory Compliance Statements

Wireless Guidance

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. The following section is a general overview of considerations while operating a wireless device.

Additional limitations, cautions, and concerns for specific countries are listed in the specific country sections (or country group sections). The wireless devices in your system are only qualified for use in the countries identified by the Radio Approval Marks on the system rating label. If the country you will be using the wireless device in, is not listed, please contact your local Radio Approval agency for requirements. Wireless devices are closely regulated and use may not be allowed.

The RF field strength of the wireless device or devices that may be embedded in your notebook are well below all international RF exposure limits as known at this time. Because the wireless devices (which may be embedded into your notebook) emit less energy than is allowed in radio frequency safety standards and recommendations, manufacturer believes these devices are safe using. Regardless of the power levels, care should be taken to minimize human contact during normal operation.

Some circumstances require restrictions on wireless devices. Examples of common restrictions are listed on the next page:



- Radio frequency wireless communication can interfere with equipment on commercial aircraft. Current aviation regulations require wireless devices to be turned off while traveling in an airplane. 802.11ABGN (also known as wireless Ethernet or Wifi) and Bluetooth communication devices are examples of devices that provide wireless communication.
- In environments where the risk of interference to other devices or services is harmful or perceived as harmful, the option to use a wireless device may be restricted or eliminated. Airports, Hospitals, and Oxygen or flammable gas laden atmospheres are limited examples where use of wireless devices may be restricted or eliminated. When in environments where you are uncertain of the sanction to use wireless devices, ask the applicable authority for authorization prior to use or turning on the wireless device.
- Every country has different restrictions on the use of wireless devices. Since your system is equipped with a wireless device, when traveling between countries with your system, check with the local Radio Approval authorities prior to any move or trip for any restrictions on the use of a wireless device in the destination country.
- If your system came equipped with an internal embedded wireless device, do not operate the wireless device unless all covers and shields are in place and the system is fully assembled.

Regulatory Compliance Statements



- Wireless devices are not user serviceable. Do not modify them in any way. Modification to a wireless device will void the authorization to use it. Please contact manufacturer for service.
- Only use drivers approved for the country in which the device will be used. See the manufacturer System Restoration Kit, or contact manufacturer Technical Support for additional information.

United States of America

USA and Canada Safety Requirements and Notices

Do not touch or move antenna while the unit is transmitting or receiving.

Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.

Do not operate the radio or attempt to transmit data unless the antenna is connected; if not, the radio may be damaged.

Use in specific environments:

The use of wireless devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.

The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).

The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.



Explosive Device Proximity Warning

Do not operate a portable transmitter (such as a wireless network device) near unshielded blasting caps or in an explosive environment unless the device has been modified to be qualified for such use.

Regulatory Compliance Statements



Use On Aircraft Caution

Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Other Wireless Devices

Safety Notices for Other Devices in the Wireless Network: Refer to the documentation supplied with wireless Ethernet adapters or other devices in the wireless network.



The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification to said product not expressly approved by Intel could void the user's authority to operate this device.

Unintentional Emitter per FCC Part 15

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Regulatory Compliance Statements

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet helpful: "Something About Interference."

This is available at FCC local regional offices. Our company is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by our company. The correction will be the responsibility of the user. Use only shielded data cables with this system.

Intentional emitter per FCC Part 15

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in the United States of America if an FCC ID number is on the system label.

This device is restricted to indoor use due to its operation in the 5.15 to 5.25 GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25 GHz to reduce the potential for harmful interference to co-channel Mobile Satellite systems. High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and /or damage this device. Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.



Wireless devices are not user serviceable. Do not modify them in any way.

Modification to a wireless device will void the authorization to use it. Contact manufacturer for service.

Regulatory Compliance Statements

Health and safety information

Exposure to Radio Frequency (RF) Signals

Certification Information

This product can contain an embedded radio transmitter and receiver. It is designed and manufactured not to exceed the exposure limits for radio frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. government. These FCC exposure limits are derived from the recommendations of two expert organizations, the National Council on Radiation Protection and Measurement (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). In both cases, the recommendations were developed by scientific and engineering experts drawn from industry, government, and academia after extensive reviews of the scientific literature related to the biological effects of RF energy.

Before a new model is available for sale to the public, it must be certified to the FCC that it does not exceed the exposure limit established by the FCC. Evaluation per each model is performed in positions and locations (e.g. at the bottom on the body) as required by the FCC.

For body worn operation, this model meets the FCC RF exposure guidelines when used with Samsung accessory designated for this product. Non-compliance with the above restrictions may result in violation of FCC RF exposure guidelines.

RF exposure or SAR information can be viewed on-line at <http://www.fcc.gov/oet/ea/fccid/>. This site uses this product FCC ID number on the outside of the product. Sometimes it may be necessary to remove the battery pack to find the number. Once you have the FCC ID number for a particular product, follow the instructions on the website and it should provide RF exposure information or values for typical or maximum SAR for particular product.

For corresponding model only

The Specific Absorption Rate (SAR) is a measure of the rate of absorption of RF energy by the human body expressed in units of watts per kilogram (W/kg). The FCC wireless devices to comply with a safety limit of 1.6 watts per kilogram (1.6W/kg).

SAR level of this device while operating can be well below the maximum value. This is because the device is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output.

Regulatory Compliance Statements

Canada

Unintentional Emitter per ICES-003

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Intentional Emitter per RSS 210

This device complies with RSS 210 of Industry Canada. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device."

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication. To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

(If fitted with 2.4G band or 5G band)

Low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz Band, may be present (embedded) in your notebook system. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.

Wireless devices that may be in your system are only qualified for use in Canada if an Industry Canada ID number is on the system label.

When using IEEE 802.11a wireless LAN, this product is restricted to indoor use due to its operation in the 5.15- to 5.25-GHz frequency range. Industry Canada requires this product to be used indoors for the frequency range of 5.15 GHz to 5.25 GHz to reduce the potential for harmful interference to co-channel mobile satellite systems. High power radar is allocated as the primary user of the 5.25- to 5.35-GHz and 5.65 to 5.85-GHz bands. These radar stations can cause interference with and/or damage to this device.

The maximum allowed antenna gain for use with this device is 6dBi in order to comply with the E.I.R.P limit for the 5.25- to 5.35 and 5.725 to 5.85 GHz frequency range in point-to-point operation.

The power output of the wireless device (or devices), which may be embedded in your notebook, is well below the RF exposure limits as set by Industry Canada.

Regulatory Compliance Statements

Operation of this device is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2)
this device must accept any interference received, including
interference that may cause undesired operation of the device.

! To prevent radio interference to licensed service, this device
is intended to be operated indoors and away from windows
to provide maximum shielding. Equipment (or its transmit
antenna) that is installed outdoors is subject to licensing.

! Wireless devices are not user serviceable. Do not modify
them in any way. Modification to a wireless device will void
the authorization to use it. Contact manufacturer for service.

Brazil

Este produto esta homologado pela ANATEL, de acordo com
os procedimentos regulamentados pela Resolucao 242/2000, e
atende aos requisitos tecnicos aplicados.

Este equipamento opera em caráter secundário, isto é, não
tem direito a proteção contra interferência prejudicial, mesmo
de estações do mesmo tipo, e não pode causar interferência a
sistemas operando em caráter primário.

Regulatory Compliance Statements

European Union

European Union CE Marking and Compliance Notices

Products intended for sale within the European Union are marked with the Conformité Européene (CE) Marking, which indicates compliance with the applicable Directives and European standards and amendments identified below. This equipment also carries the Class 2 identifier.

The following information is only applicable to systems labeled with the CE mark .

European Directives

This Information Technology Equipment has been tested and found to comply with the following European directives:

- EMC Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC
- R&TTE Directive 1999/5/EC

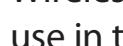
Samsung Electronics (UK) Ltd, Euro QA Lab.

Blackbushe Business Park Saxony Way, Yateley,
Hampshire GU46 6GG United Kingdom

European Radio Approval Information (for products fitted with EU-approved radio devices)

This Product is a Notebook computer; low power, Radio LAN type devices (radio frequency (RF) wireless communication devices), operating in the 2.4GHz/5GHz band, may be present (embedded) in your notebook system which is intended for home or office use. This section is only applicable if these devices are present. Refer to the system label to verify the presence of wireless devices.



Wireless devices that may be in your system are only qualified for use in the European Union or associated areas if a CE mark  with a Notified Body Registration Number and the Alert Symbol is on the system label.

The power output of the wireless device or devices that may be embedded in you notebook is well below the RF exposure limits as set by the European Commission through the R&TTE directive.

The low band 5.15 - 5.35 GHz is for indoor use only.



See 802.11b and 802.11g restrictions for specific countries or regions within countries under the heading "European Economic Area Restrictions" below.

Regulatory Compliance Statements

EU R&TTE Compliance Statements

| | | |
|--|--------------------------|---|
|  cs | Česky [Czech] | Samsung tímto prohlašuje, že tento Notebook PC je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES. |
|  da | Dansk [Danish] | Undertegnede Samsung erklærer herved, at følgende udstyr Notebook PC overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EU. |
|  de | Deutsch [German] | Hiermit erklärt Samsung, dass sich das Gerät Notebook PC in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet. |
|  et | Eesti [Estonian] | Käesolevaga kinnitab Samsung seadme Notebook PC vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. |
|  en | English | Hereby, Samsung, declares that this Notebook PC is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. |
|  es | Español [Spanish] | Por medio de la presente Samsung declara que el Notebook PC cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE. |

| | | |
|--|------------------------------|---|
|  el | Ελληνική [Greek] | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ Samsung ΔΗΛΩΝΕΙ ΟΤΙ Notebook PC ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/EK. |
|  fr | Français [French] | Par la présente Samsung déclare que l'appareil Notebook PC est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. |
|  it | Italiano [Italian] | Con la presente Samsung dichiara che questo Notebook PC è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE. |
|  lv | Latviski [Latvian] | Ar šo Samsung deklarē, ka Notebook PC atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. |
|  lt | Lietuvių [Lithuanian] | Šiuo Samsung deklaruoją, kad šis Notebook PC atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. |
|  nl | Nederlands [Dutch] | Hierbij verklaart Samsung dat het toestel Notebook PC in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. |
|  mt | Malti [Maltese] | Hawnhekk, Samsung, jiddikjara li dan Notebook PC jikkonforma mal-ħtiāijiet esenziali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC. |

Regulatory Compliance Statements

| | | | | |
|----|-------------------------------|---|----------------------|---|
| hu | Magyar [Hungarian] | Alulírott, Samsung nyilatkozom, hogy a Notebook PC megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak. | Íslenska [Icelandic] | Hér með lýsir Samsung yfir því að Notebook PC er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC. |
| pl | Polski [Polish] | Niniejszym Samsung oświadcza, Ŝe Notebook PC jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC. | Norsk [Norwegian] | Samsung erklærer herved at utstyret Notebook PC er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EU. |
| pt | Português [Portuguese] | Samsung declara que este Notebook PC está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE. | Türkiye [Türkçe] | Bu belge ile, Samsung bu Notebook PC'nin 1999/5/EC Yönetmeliğinin temel gerekliliklerine ve ilgili hükümlerine uygun olduğunu beyan eder. |
| sl | Slovensko [Slovenian] | Samsung izjavlja, da je ta Notebook PC v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES. | | |
| sk | Slovensky [Slovak] | Samsung týmto vyhlasuje, že Notebook PC splňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES. | | |
| fi | Suomi [Finnish] | Samsung vakuuttaa täten että Notebook PC tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. | | |
| sv | Svenska [Swedish] | Härmed intygar Samsung att denna Notebook PC står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. | | |

Regulatory Compliance Statements

To view the EU Declaration of Conformity for this product (in English only), go to: <http://www.samsung.com/uk/support/main/supportMain.do> or <http://www.samsung.com/uk/support> then search the model number of the product.

If the Declaration of Conformity for the model you are interested in is not available on our web-site, please contact your distributor or below address.

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For the web or the phone number of Samsung Service Centre, see
the Warranty or contact the retailer where you purchased your
product.

European Economic Area Restrictions

Local Restriction of 802.11b/802.11g Radio Usage

[Note to integrator: The following statements on local restrictions must be published in all end-user documentation provided with the system or product incorporating the wireless product.]



Due to the fact that the frequencies used by 802.11b/802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11b/802.11g products are designed for use only in specific countries or regions, and are not allowed to be operated in countries or regions other than those of designated use.

As a user of these products, you are responsible for ensuring that the products are used only in the countries or regions for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country or region of use. Any deviation from permissible settings and restrictions in the country or region of use could be an infringement of local law and may be punished as such.

Regulatory Compliance Statements

The European variant is intended for use throughout the European Economic Area. However, authorization for use is further restricted in particular countries or regions within countries, as follows:

General

European standards dictate maximum radiated transmit power of 100 mW effective isotropic radiated power (EIRP) and the frequency range 2400 – 2483.5 MHz.

The low band 5.15 - 5.35 GHz is for indoor use only.

Belgium

Dans le cas d'une utilisation privée, à l'extérieur d'un bâtiment, au-dessus d'un espace public, aucun enregistrement n'est nécessaire pour une distance de moins de 300m. Pour une distance supérieure à 300m un enregistrement auprès de l'IBPT est requis. Pour une utilisation publique à l'extérieur de bâtiments, une licence de l'IBPT est requise. Pour les enregistrements et licences, veuillez contacter l'IBPT.

Pour les autres langues, reportez-vous aux modes d'emploi correspondants.

France

The low band 5.15 - 5.35 GHz is for indoor use only.

RTC CAUTION

CAUTION : Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the Manufacturer's instruction.

Attention: Danger d'explosion si les piles sont mal placées. Remplacez les piles usagées uniquement par des piles de type identique ou équivalent recommandées par le fabricant. Otez les piles usagées selon les instructions du fabricant.

WEEE Symbol Information



Correct disposal of this product (Waste Electrical & Electronic Equipment)

(Applicable in countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life.

To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

India Only

For more information on safe disposal and recycling visit our website www.samsung.com/in or contact our Helpline numbers - 18002668282, 180030008282.

This product is RoHS compliant.



Correct disposal of batteries in this product

(Applicable in countries with separate collection systems)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

To protect natural resources and to promote material re-use, please separate batteries from other types of waste and recycle them through your local, free battery return system.

USA ONLY



This Perchlorate warning applies only to primary CR (Manganese Dioxide) Lithium coin cells in the product sold or distributed ONLY in California USA.

"Perchlorate Material- special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate."

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website: www.samsung.com/recyclingdirect Or call, (877) 278-0799

For battery recycling go to call2recycle.org; or call 1-800-822-8837

Warning : This product contains chemicals known to the state of California to cause cancer and reproductive toxicity.

Samsung Packaging Take-Back Program

In partnering with select recyclers, Samsung offers packaging take-back at no cost to you.

Simply call the following number for the locations nearest you.

CRT Processing, LLC

(877) 278-0799

Kathy Severson – Logistics contact

Dispose unwanted electronics through an approved recycler.

To find the nearest recycling location, go to our website:

www.samsung.com/recyclingdirect Or call, (877) 278-0799

Product Specifications

The system specifications may differ depending on the derived models.

For detailed system specifications, refer to the product catalogue.

| | |
|------------------------------|--|
| Operating environment | Temperature: -5–40 °C for storage, 10–35 °C when operating Humidity: 5–90 % for storage, 20–80 % when operating |
| AC/DC rating | Input: 100–240 VAC, 50–60 Hz Output: 19 VDC, 2.1 A |
| PC rating | 19 VDC 2.1 A (40 W) |



- Optional components may not be provided or different components may be provided depending on the computer model.
- The system specifications are subject to change without notice.
- The hard disk drive capacity of a computer in which Samsung Recovery Solution is installed, is represented as smaller than the product specification.
- Replacement, addition, or upgrade of memory is unavailable for this computer hardware.
- The amount of memory that Windows can use may be smaller than the actual amount of memory available.

Product Specifications

Registered Trademarks

Samsung is a registered trademark of Samsung Co., Ltd.

Intel, Core™ i3 / i5 are registered trademarks of the Intel Corporation.

Microsoft, MS-DOS, and Windows are registered trademarks of the Microsoft Corporation.

Bluetooth® is a registered trademark of Bluetooth SIG, Inc. worldwide.



The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

All other product or company names mentioned herein are registered trademarks of their respective companies.

ENERGY STAR® Partner



As an ENERGY STAR® Partner, SAMSUNG has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

- The ENERGY STAR Program has reduced greenhouse gas emissions and saved energy through voluntary labeling
- Power management setting of this product have been enabled by default, and have various timing settings from 1 minute to 5 hours.
- The product can wake with a button press on the chassis from sleep mode.

Glossary

The Glossary lists the terminologies used in this User Manual. For terminologies other than these, look in Windows Help.

Backup

A way to save the current data to restore it later if necessary. A backup is a way to restore computer data when the data or computer is damaged.

Chargeable USB

This program enables supplying power to a specific USB port when the system is in power saving mode, hibernation mode or off.

Client

This refers to a computer that uses a shared network resource provided by a server.

DDR SDRAM

(Double Data Rate Synchronous Dynamic Random Access Memory)

DRAM is a memory type whose cells consist of a capacitor and transistor manufactured at a low price. SDRAM is a memory type whose performance has been improved by synchronizing the clock with the external CPU clock. DDR SDRAM is a memory type whose performance has been improved by doubling the operating speed of the SDRAM and is widely used nowadays. This computer uses DDR SDRAM.

Device Manager

An administrative tool used to manage computer devices. You can add or remove hardware or update a device driver using the Device Manager.

DHCP (Dynamic Host Configuration Protocol)

This refers to automatically allocating IP addresses to the users on the network by the network administrators.

Direct X

An application interface developed to enable Windows application programs to access hardware devices at a very high speed. Since the operating speed of graphics, memory and sound cards must be very fast to provide high quality video and sound for games, Direct X enables faster control and interaction between applications and hardware devices. By using Direct X, the multimedia performance of Windows has been hugely improved.

Driver

Software that interacts between the hardware and the operating system. An operating system knows the hardware information and controls the hardware. In general, a driver is supplied with the corresponding hardware device.

D-sub (D-subminiature)

This is the cable connecting a general CRT monitor and the computer. Analog video is output through this cable.

Glossary

DVD (Digital Versatile Disk)

DVD was developed to replace CD (compact disk). Although the shape and size of the disc are the same as that of a CD, the capacity of a DVD is at least 4.7GB while the capacity of a CD is 600MB. DVD video is digital unlike VHS (analog) video and supports MPEG2 compression and digital audio. To play a DVD, a DVD drive is required.

Firewall

A security system used to protect an internal network or intranet from external networks through an authentication procedure.

HDMI

This is a digital video / audio interface specification that transmits video and audio signals over a single cable.

Hibernation Mode

A power mode that saves all data in memory to the hard disk and turns the CPU and hard disk off. When canceling Hibernation Mode, all application programs that were running are restored to their last state.

Icon

This refers to a small image that represents a file that users can use.

IEEE802.XX

This is a set of specifications developed by the 802 committee of IEEE for the LAN connection method called XX.

LAN (Local Area Network)

A communications network connecting computers, printers and other devices within a local area such as within a building. A LAN enables all connected devices to interact with other devices on the network. The current LAN uses the Ethernet media access control method developed in the early 1980s. To connect to an Ethernet, a network card called a LAN card, Ethernet card or network interface card is required. To exchange data between computers, a protocol is required besides the hardware equipment. Windows uses TCP/IP as the default protocol.

LCD (Liquid Crystal Display)

There are Passive Matrix and Active Matrix LCD types. This computer uses the Active Matrix type LCD called a TFT LCD. Since an LCD is implemented by transistors instead of a cathode-ray tube unlike a CRT, its size can be slim. And because it does not blink, it reduces eye strain.

Glossary

Network

A group of computers and devices, such as printers and scanners, connected by a communications link. A network can be either small or large and can be connected permanently through cables or temporarily through telephone lines or wireless links. The biggest network is the Internet, a worldwide network.

Network Administrator

A user who plans, configures and manages network operations. Sometimes, a network administrator is called a system administrator.

Notification Area

This refers to the right area of the Taskbar including program icons such as the volume control, the power options and the time.

Partition

This refers to the act or practice of dividing the storage space of a hard disk drive into separate data areas known as partitions. If a 100GB hard disk drive is partitioned into 2 x 50GB partitions, the hard disk drive can be used as if there are 2 hard disk drives.

Protocol

A protocol is a set of rules used by computers to communicate with each other across a network. A protocol is a convention or standard that controls or enables the connection, communication, and data transfer between computing endpoints. It defines the data transmission procedures and the transmission medium for more efficient network functions.

Quick Launch

This refers to a toolbar that can be configured so that you can launch a program such as Internet Explorer or display the Windows Desktop with one click. You can add any icon to the quick launch area of the Taskbar and launch frequently used program by clicking that icon.

SDHC (Secure Digital High Capacity) card

This is the extension of the SD card that supports over 2GB bytes.

SDXC (Secure Digital eXtended Capacity)

SDXC provides a higher capacity and speed than the SDHC specification. This is a new SD card specification that can theoretically implement a memory capacity up to 2TB.

For high capacity implementation, apply the exFAT specifications.

Server

In general, a server refers to a computer that provides shared resources for network users.

Glossary

Share

This refers to setting a resource of a computer such as a folder or printer so that other users can also use it.

Shared Folder

A folder that can be used by other users on the network.

Sleep Mode

A power mode that enables computers to save power consumption when they are not being used. When a computer is in Sleep Mode, the data on the computer memory is not saved to the hard disk. If the power is turned off, the data in memory will be lost.

System File

System Files refer to files that are read and used by the Windows operating system. In general, system files must not be deleted or moved.

TCP/IPv4

This is a 4 byte (32 bit) address system separated into each byte (8 bits) by a dot and each byte is represented as a decimal number.

USB (Universal Serial Bus)

This refers to a serial interface standard developed to replace the conventional interface standards such as Serial and PS/2.

The data transmission specifications are one of the interface standards used to connect a computer to peripheral devices. These specifications include USB 1.0, 1.1, 2.0 and 3.0.

It is appropriate to support peripheral devices that require high data rates such as an AV device, secondary HDD or CD-RW. The higher the version (e.g. USB 3.0), the higher the data rate provided.

Windows Media Player

A multimedia program included with Windows. Using this program, you can play a media file, create an audio CD, listen to a radio broadcast, search and manage media files, and copy files to a portable device, etc.